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BEFORE THE PUBLIC UTILITIES COMMISSION

OF THE STATE OF HAWAII

---------- In the Matter of ----------	)	
	)	DOCKET NO. 05-0002
PUBLIC UTILITIES COMMISSION	)	
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Instituting a Proceeding to Investigate the Issues and Requirements Raised by, and Contained in, Hawaii Revised Statutes Chapter 486H, as Amended	)	
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PUBLIC UTILITIES COMMISSION

CHEVRON U.S.A., INC.'S POSITION STATEMENT

AND

CERTIFICATE OF SERVICE

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CHEVRON U.S.A., INC.'S POSITION STATEMENT

COMES NOW, CHEVRON U.S.A., INC., by and through its attorneys, and hereby submits its Position Statement which is filed pursuant to Order No. 21670.

DATED: Honolulu, Hawaii, July 1, 2005.

MICHAEL H. LAU
KENT D. MORIHARA

Attorneys for Chevron U.S.A. Inc.

Chevron Position on ICF's Report to the Hawaii Public Utilities Commission

Based on our review and analysis of the report ("Implementation Recommendations for Hawaii Revised Statutes Chapter 468H, Gasoline Price Cap Legislation," dated April 15, 2005) submitted by ICF Consulting to the Hawaii Public Utilities Commission, Chevron strongly recommends that the PUC urge the Administration to delay the implementation of the gas cap legislation by exercising its authority pursuant to §486H-15, HRS, to suspend Act 242.* Our review of the ICF report, comments by DBEDT and comments by ICF itself confirm that implementation of the gas cap legislation will have a major adverse impact on the economy, public order, or the health, welfare or safety of the people of Hawaii. This delay would allow time for the Administration, Legislature and PUC to further analyze the potential impacts of the proposed price cap mechanism. We also recommend that the State re-examine the current gasoline market in the context of an excessive regulatory environment, and rather than implement laws that interfere with the normal operation of the market, it develop policies that would help refiners and marketers reduce costs and further the competitive operation of the market.

As indicated, this recommendation is not only consistent with the concerns expressed by DBEDT in its May 23, 2005 letter to the PUC identifying the potentially serious negative consequences if the gas cap is implemented, but also with those of ICF, as noted in its recent Response to Consumers Advocate Information Requests. In addition to proposing significant changes to the price cap mechanism (such as eliminating caps on bulk sales and unbranded rack sales, and addressing the rent cap impact), ICF now recommends postponing implementation of the price cap mechanism until after the ethanol mandate is in place so that the impact of that mandate can be analyzed and fully considered.

Chevron's primary concerns regarding ICF's proposed price cap mechanism are summarized below:

- **The expanded scope of the price cap mechanism beyond the original legislation.** ICF proposes not only to cap wholesale gasoline prices, but introduces additional structure and complexity to regulate the relationship between various wholesale prices. Such a complex system of controls could further distort the gasoline market and impair its ability to adjust to variations in supply and demand across different distribution channels. In the worst case, certain disadvantaged distribution channels could become uneconomic, limiting supply in the affected areas and significantly impacting consumers. In addition, the cost to develop, administer and enforce such a complex system of controls would be substantial.

- **The recommendation for an "import parity" benchmark sourced from Singapore and the Caribbean.** The feasibility of this baseline is highly questionable, since no current spot market for Hawaii grade gasoline currently exists in these markets. In addition, ICF uses

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* The governor may suspend, in whole or in part, Section 486H-13, HRS, or any rule adopted pursuant that section, whenever the governor issues a written determination that strict compliance with the section or a rule will cause a major adverse impact on the economy, public order, or the health, welfare, or safety of the people of Hawaii. In the written determination, the governor is required to identify the specific provision of the section or rule that strict compliance with will cause a major adverse impact on the economy, public order, or the health, welfare, or safety of the people of the State, along with specific reasons for that determination. The governor then must publish this determination in accordance with Section 1-28.5, HRS, with the suspension to take effect upon issuance of the written determination by the governor. § 486H-15(a), HRS.

unrealistic assumptions regarding the economics of gasoline imports to Hawaii, such as the omission of terminal capital, working capital and inventory carrying costs. Using such an import parity baseline with estimated prices does not result in the reliability and transparency that ICF admits is needed for this important benchmark. DBEDT also expresses concerns in its letter that the use of foreign prices as benchmarks "may not be reflective of actual production costs in Hawaii", and that "the PUC should understand how the proposed ICF methodology will affect economics and returns to the Hawaii refiners". Those impacts remain uncertain and, in the worst case of a potential refinery closure, could result in an increase in "Hawaii's dependence on imported products, ..., directionally raise prices and require additional inventory for contingency supply", as also noted by ICF in its report.

- **No provision is made for the impact of other legislative mandates.** The recent reinstatement of rent caps for lessee dealers and the ethanol mandate scheduled for implementation in 2006 will increase the cost structure of the distribution system. As noted above, ICF recognizes the potentially significant impact of the ethanol mandate. Hawaii's existing encroachment/divorcement law will also continue to put upward pressure on costs by limiting the number of company operated stations. In 2003, the FTC warned that "divorcement would unquestionably increase the cost of gasoline distribution." The combined impact of all of these regulations cannot be quantified, but directionally raises costs and, combined with the proposed price cap, could result in significant unintended and unfavorable consequences for Hawaii consumers and the State.

The selection of arbitrary and inconsistent benchmarks to develop various wholesale margins. We see no evidence that ICF analyzed the specifics of the Hawaii market and aligned benchmark selections with those results. The mainland areas selected for comparison do not accurately represent the geographic and market characteristics of Hawaii, and were applied inconsistently across distribution channels. In addition, ICF's use of average margins from the mainland data collected is arbitrary, since their own data show significant geographic variability in margins across different markets. Suppliers with costs in excess of the "average" could be significantly disadvantaged, potentially impacting supply and harming Hawaii consumers.

ICF's recognition of the potential for significant impacts on the gasoline market. ICF admits that the gasoline price cap mechanism will significantly alter business in Hawaii, and warns the PUC to examine the effects on suppliers and consumers after six months of regulation. ICF concedes that suppliers experience higher fixed costs per gallon in Hawaii, when compared to mainland markets, and now admits that for some "remote" areas, the risks posed by the caps are so severe that a monitoring strategy should be used instead of a "hard compliance system". Possible negative consequences identified by DBEDT include "risks of supply interruption, inefficiencies, price volatility and reduced competition at the retail level". More time is needed to study and mitigate potential impacts of this proposed price cap.

The questionable efficacy of wholesale price caps in achieving lower retail gasoline prices. Per ICF's report, "the wholesale Gas Caps affect wholesale prices only. While there is a good deal of competitiveness at the retail (street price) level in Hawaii, it must be recognized that retail marketers are under no obligation to lower street price if wholesale prices are reduced." Given this uncertainty in achieving the stated objective for price cap implementation, it is questionable whether the implementation of Act 242 will result in sufficient consumer benefit to outweigh the significant costs and enormous risks associated with the price cap mechanism.

ICF's proposed price cap mechanism, by its own admission, leaves a number of unanswered questions, as well as the potential for significant unintended and unfavorable impacts to the

Hawaii gasoline market. A more detailed analysis of the ICF proposal follows in the attached report prepared for Chevron by Dr. David Teece, Chairman of LECG. Dr. Teece is a Professor at the Haas School of Business, University of California, Berkeley, and has written extensively on issues involving competition, business strategy, and energy economics. He was retained by Chevron as an expert witness in the antitrust litigation brought by the Hawaii Attorney General against Chevron and other gasoline marketers in Hawaii.

Chevron continues to believe that price caps are bad public policy which will not be in the best interest of Hawaii's consumers, and that free markets perform most efficiently and effectively in balancing supply and demand. The FTC was in agreement with that position, as evidenced by testimony provided by Mr. Jerry Ellig, Deputy Director, Office of Policy Planning, during a joint hearing in the State of Hawaii on January 28, 2003. He testified that "a decision to impose price controls is also, in most cases, a decision to supplant competitive forces with direct administrative intervention. A significant body of research and experience suggests that price controls have a poor record of improving consumer welfare in markets where competition is possible, and may in fact cause more harm than good in the long term". In addition, he testified that "the more consumer-friendly ways to reduce gasoline prices in Hawaii would be through policies that reduce costs and/or promote competition. Policies that may deserve further consideration include repealing Hawaii's retail anti-encroachment law, repealing the rent cap on gas stations..."

The price cap legislation and the ICF report also ignore findings from the State's antitrust lawsuit. Dr. Leffler, the State's economist, had conceded that price levels in Hawaii were attributable in part to high taxes and high barriers to entry. The judge in that litigation noted that these barriers included "an adverse political climate, including rent controls, government proposals to take over petroleum terminals, and restrictions on the location and type of station that may be built". Legislation enacted by the state since the early 1990's had also adversely impacted price levels. Dr. Summer LaCroix, University of Hawaii, testified that the moratorium on constructing new service stations "likely had the effect of raising retail margins in Hawaii". Other factors such as the small scale, high fixed costs, and other structural aspects of the Hawaii market also combine to discourage entry of new competitors.

Chevron strongly urges the PUC to work with the Administration to delay implementation of this legislation. In addition, we recommend that the State re-examine the current state of the Hawaii gasoline market in the context of an excessive regulatory environment, and look for ways to promote the competitive operation of the market.

REPORT OF DR. DAVID J. TEECE

JULY 1, 2005

I. Introduction

My name is David J. Teece. I am the Mitsubishi Bank Professor at the Haas School of Business at the University of California, Berkeley, where I also direct the Institute of Management, Innovation and Organization. I received my Ph.D. in Economics from the University of Pennsylvania in 1975 and have held teaching and research positions at Stanford University and Oxford University. I have written extensively on issues involving competition, business strategy, and energy economics. I have published over 150 books and articles. Relevant publications include *OPEC Behavior and World Oil Prices* and *A Tariff on Imported Oil*, both co-authored with Professor James Griffin. More recently I published a paper on the market for California heavy crude and the contractual mechanisms used to solve pricing and production issues.[1] In addition, I wrote three papers in 1991 related to the Hawaii gasoline market: "Petroleum Product Exchange Agreements," "Explaining Petroleum Product Price Differentials Between the U.S. West Coast and Hawaii," and "An Economic Analysis of S.B. 1757 Relating to Prohibition Against Retailing of Motor Fuel by Refiners." I was also retained by Chevron as an expert witness in the litigation brought by the Hawaii Attorney General against Chevron and gasoline marketers. I have testified before arbitrators, judges, juries, legislators, and tribunals in multiple jurisdictions, including Australia, Canada, France, New Zealand, the U.K., and the U.S. Attached, as Exhibit 1 is my curriculum vitae.

I have been asked by Chevron to review the report submitted to the Hawaii Public Utilities Commission by ICF Consulting regarding a proposal to place constraints on wholesale gasoline prices in Hawaii and to analyze the methodology and conclusions contained in that report. I am aware that ICF has responded to questions posed by various interested parties, and

[1] Contractual Hazards and Long-Term Contracting: a Transaction Cost Economics View from the Petroleum Industry: Edward F. Sherry, David J. Teece, Industrial and Corporate Change. Oxford: December 2004, Vol. 13, Iss. 6; pp. 931.

that in its responses ICF has modified (and, in some cases, abandoned) some of the proposals set forth in its Report. Section 2 of this report summarizes my conclusions; Section 3 provides a brief context for my evaluation of the ICF gas cap proposal; Section 4 discusses ICF's proposal and method for calculating import parity prices, as well as bulk, rack, and DTW price caps; Section 5 discusses potential consequences of the proposed gas caps; Section 6 analyzes retail gasoline prices in Hawaii and describes why the proposed caps may not provide lower gasoline prices to consumers in Hawaii; and Section 7 discusses the relative costs and benefits of the proposed caps.

In evaluating ICF's proposals, I do not mean to imply that the original legislation is necessarily preferable in any respect or that any regime of price controls could achieve more consumer good than harm. To the extent that the ICF or the legislative proposals constrain market forces and suppress prices below competitive levels, they are likely to cause serious unintended consequences that will leave consumers worse off than they would be if the free market operated without government intervention.[2]

It is important to note that ICF itself questions the desirability and potential effects of the price caps in Hawaii, stating for example "gas caps can be counterproductive to a competitive marketplace.[3] While ICF explicitly states that it is not in its "charter" to question the appropriateness of the legislation, it is clear that ICF does not guarantee that its proposal, if accepted, will lead to lower retail gasoline prices in Hawaii or that there will not be unforeseen and unfavorable consequences if gas caps are implemented. ICF has recently explicitly stated that it agrees with the conclusion that "transparency of the price information to consumers, and

[2] In its comments on ICF's proposal, Hawaii's Department of Business, Economic Development and Tourism ("DBEDT") recognized the potential for "harmful market distortions" if price caps are not carefully designed.
[3] ICF Response to HPMA-IR-39. See also ICF Report at 1 and 73.

watchdog schemes can be as effective or more so than price caps."[4] In addition, apparently as the process of evaluating the methodology it set forth in the original report has continued, ICF has concluded that its methodology may require additional analysis and testing before implementation should occur.

In its responses to Consumers Advocate Information Requests, ICF lists seven "departures" from the analysis contained in its earlier report, including adjustments to marketing margins to reflect both (a) relative land values in Hawaii versus the benchmark markets and (b) the effect of rent caps in Hawaii.[5] ICF also acknowledges concerns about the ethanol mandate issue and the effect of the caps on small marketers. As a result of these shortcomings in its original proposal, ICF now recommends that the caps be "initiated on a 'calculation and monitoring' basis" until the ethanol mandate is in place and a stable supply of ethanol in Hawaii is assured.[6] This suggests that ICF is now recommending that implementation of the caps on gasoline marketers be postponed until these issues, which were not analyzed in its original report, can be addressed. ICF now further recommends the elimination of the cap on bulk sales that it had originally proposed, possible elimination of its proposed cap on unbranded rack sales, and a "gas cap monitoring and publication system" as an alternative to a "hard compliance system" for "remote" locations.[7] That is, ICF apparently now believes that the potential risks associated with its proposal would outweigh the benefits for these channels of trade and geographic areas. It is clear that ICF now recognizes that its proposal should not be implemented in the form that it originally proposed.

[4] ICF Response to Tesoro-IR-58.
[5] ICF Response to CA-IR-1. See also ICF Response to CHEV-IR-33.
[6] ICF Response to CA-IR-1, CA-IR-5.
[7] ICF Response to CA-IR-1, CA-IR-12. ICF states that this issue has "no easy solution for the PUC to consider." Adding zones may require legislative intervention and ICF states, but "it may never end."

II. Summary of Conclusions

Short of the ultimate conclusion that price caps will cause more harm than good, whether under the original legislation or modified as proposed by ICF, I have reached five principal conclusions related to ICF's recommendation to the PUC for implementing the wholesale gasoline price cap legislation. First, the ICF proposal deviates substantially from the legislation as adopted. ICF's original proposal (which included separate caps on bulk, rack and DTW sales) would have the PUC not only cap wholesale gasoline prices but also to regulate and impose a structure on the relationships between and among various wholesale prices in Hawaii. That is, for example, under ICF's proposal the allowable differential between the DTW price and rack price is regulated. In effect, the ICF proposal would direct the PUC to impose a structure on the relationships between bulk, rack and DTW prices that has no counterpart in the legislation as adopted. ICF offers little, if any, explanation and no analysis whatsoever to support the proposition that such structuring is either necessary or desirable. Moreover, in my opinion there is no underlying economic rationale or basis for this significant departure from the original legislation and ICF has done no analysis for the PUC to assess the risks associated with this more far-reaching strategy.

Second, the import parity price formula proposed by ICF does not meet its own criteria for selecting a benchmark price. If this critical building block of the price caps is wrong, the resulting price caps will be irretrievably flawed. ICF assumes that the baseline for price caps should involve an "import parity price" estimated as the average of spot prices of gasoline in the Caribbean and Singapore, plus (certain) costs associated with importing gasoline from such areas to Hawaii. By contrast the legislation uses a different benchmark, the average of prices in three mainland markets – the U.S. West Coast, the U.S. Gulf Coast and New York Harbor. ICF's

proposed import parity price differs from the baseline price initially chosen by the legislature, yet the rationale ICF presents for why alternative areas should be used contradict certain of ICF's own assumptions. ICF states that the benchmark areas should represent "likely potential sources of gasoline into Hawaii"[8] or, alternatively, that the import parity price should identify a "consistent, replicable, and market based pricing mechanism, and not a specific operational alternative to a marketer."[9] But the use of the Caribbean price does not meet either of ICF's criteria. And as ICF implies, it makes no sense to have the benchmark price based solely on Singapore given that the quality of gasoline available in Singapore is generally below Hawaii specifications. In my opinion, the problems associated with the import parity price are indicative of more general problems with ICF's overall methodology. That is, I believe that ICF made many assumptions in this proposal without a careful understanding or consideration of their implications.

Third, ICF's proposal for the amount of costs to be added to the import parity price is inconsistent with the stated purpose of generating "wholesale gasoline prices that reflect and correlate with competitive market conditions" in several important respects.[10] For example first, ICF presents no evidence that a cap on bulk sales is necessary, and given that bulk buyers of gasoline in Hawaii have sufficient buying power to negotiate competitive prices from sellers, the proposed cap is unlikely to provide benefits while creating the potential for significant harm if ICF's assumptions regarding the import parity price prove incorrect. Indeed, apparently ICF now recommends that the bulk price cap be eliminated. Second, ICF's caps on rack and DTW prices are based on estimating average "margins" on those types of sales in various areas on the mainland U.S., even though ICF admits that costs for Hawaii gasoline wholesalers may be higher

[8] ICF Report at 19.
[9] ICF Response to CHEV-IR-11.
[10] ICF Report at i.

than the costs on the mainland and that additional analysis related to relative land values and rent caps should have been undertaken but was not in its original proposal. ICF performs no analysis to guide the selection of these benchmark areas and it can be shown that selecting other benchmark areas will lead to different margins and caps. For example, while ICF selects five states for its DTW analysis and finds a DTW margin of 15 cents per gallon, selecting other benchmarks produces DTW margins in the range of 22 to 39 cents per gallon. ICF offers no evidence that its set of benchmark states is more reasonable and there is no reason to believe that the calculations based on the margins in these areas (that reflect supply and demand conditions different from Hawaii) would generate "competitive" prices in Hawaii. And finally, ICF admits that the proposed price caps do not account for the higher costs that Hawaii gasoline marketers will incur as a result of the ethanol requirements that take effect in April 2006.

Fourth, the ICF proposal can be expected to result in a host of unintended and unfavorable consequences. Given that ICF has not analyzed why prices in Hawaii are higher than prices in the benchmark areas it selected in its calculations, the resulting caps on wholesale gasoline prices would generate "competitive" prices in Hawaii only by chance. To the extent that the caps constrain wholesale prices beyond the level that would be competitive, the market for gasoline in Hawaii would be distorted in any number of ways. There is ample evidence that when prices are artificially constrained below levels that allow for normal returns, product shortages will be created. In Hawaii, such product outages could certainly occur at particular stations. ICF admits that shortages, as well as other unfavorable consequences of price caps have occurred in other jurisdictions and that some of these effects are "likely" to occur in

Hawaii.[11] And, given that retail prices are not regulated, prices of gasoline at those stations that have product will be higher with the gasoline caps than without the caps.

Finally, the costs of the ICF proposal (like those of the original legislative proposal) can be expected to outweigh any potential benefit to Hawaii consumers. An empirical study of retail gasoline prices in Hawaii indicates that retailers in Hawaii are relatively slow to respond to wholesale price reductions. Thus, only part of any reduction in wholesale prices resulting from imposition of caps on wholesale prices is likely to be passed on to consumers in the form of lower retail prices of gasoline in Hawaii. At the same time, however, the method proposed by ICF will be costly to develop, administer, monitor and arbitrate. These costs will be borne not only by suppliers of gasoline in Hawaii, but also by the PUC and ultimately by gasoline consumers in Hawaii. More significantly, the imposition of price caps is likely to result in adverse consequences in the Hawaii gasoline market, and possibly (given that gasoline is jointly produced with other petroleum products) in the broader Hawaii market for petroleum products generally. While it is the responsibility of the PUC to carefully weigh these costs and benefits as it determines policy, ICF has done no analysis to help guide the PUC in this decision.

III. Origins of Gas Cap Issue in Hawaii

It is my understanding that the issue at hand originated with the passage of Senate Bill 2179 (which became Act 77) by the Hawaii state legislature in 2002. That legislation provided for the capping of both wholesale prices of gasoline as well as retail prices of self-serve regular gasoline effective July 2004.[12] As part of the Act, the legislature directed DBEDT to report to

[11] Tesoro-IR-58. See also HPMA-IR-34.
[12] The legislation did not specify different caps for DTW, rack or bulk prices.

the legislature on the price cap issue as well as alternative proposals.[13] DBEDT provided an interim report to the 2003 legislature in which its consultants, Stillwater & Associates concluded that the proposed price caps should not be implemented. The report written by Stillwater found that price caps wouldn't generate any benefits to consumers in Hawaii, and indeed could raise costs to consumers in Hawaii.[14]

In 2004, the legislature enacted SB 3193, postponing gas price caps to September 2005, and removing the retail price caps. Hawaii wholesale unleaded regular gasoline prices, under this version of the cap, were to be set at a price equal to the weekly average spot prices of unleaded gasoline in New York, Los Angeles and the Gulf Coast plus a 4 cents per gallon location factor, 18 cents per gallon marketing margin and a zone price adjustment within each of eight geographical zones to be established by the PUC. Wholesale mid-grade gasoline was to be capped at the regular price plus 5 cents per gallon and the wholesale premium price was to be capped at the regular price plus 9 cents per gallon. SB 3193 authorized the PUC to assess or readjust the allowed margins and the baseline, if necessary.[15]

Following this, the Hawaii PUC retained ICF to review the legislative outline of the caps and in April 2005, ICF issued a report recommending major revisions to the caps as set out in SB 3193.[16] Under the ICF recommendations, a so-called import parity price is tied to a benchmark using Singapore and Caribbean prices and adjusted with estimates of freight costs from those

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[13] Act 77 also imposed dealer-operated lease rent caps and permitted the governor to suspend caps if their implementation would cause an adverse impact on the economy. For the text of the Act, see http://www.capitol.hawaii.gov/session2002/bills/SB2179_cd2_.htm.

[14] The Stillwater Report concluded that the caps proposed in the legislation would lead to increased volatility and seasonality for prices in Hawaii, that examination of attempts in other markets to implement price failed to identify any examples of clear consumer benefits, that given the variability in the retail cost structures across locations in Hawaii, price caps would be complicated and require "expert application," that one likely consequence would be diminished or eliminated supply in rural areas, and that imposition of the caps could lead to an anti-business image of Hawaii and have negative consequences for other sectors of the state economy. Stillwater Report at 2.

[15] http://www.capitol.hawaii.gov/session2004/bills/SB3193_cd1_.htm

[16] ICF acknowledges that its proposal includes "extensive" adjustments to the legislative plan. See ICF Report at 2. ICF's proposed plan is also substantially more complicated than earlier proposals, setting 96 different caps that are supposed to be updated on both a weekly and annual basis.

locations to Hawaii (along with certain other costs of importing). Both the spot prices recommended by ICF as well as the freight adjustments are different from those originally proposed by the legislature. In addition, the grade differentials in ICF's proposal are different from those in the legislation.

However, the most significant difference between the price caps in the legislation and those recommended by ICF is that ICF, through its original proposal to set different caps for bulk sales, unbranded rack sales, branded rack sales and DTW sales, is essentially imposing a pricing "structure" on wholesale prices in Hawaii. That is, while the legislature apparently acted on the belief that at least some wholesale gasoline prices in Hawaii were too high, ICF apparently believed that in addition to establishing a price cap for wholesale sales, the relationships between different types of wholesale prices (bulk, branded rack, unbranded rack, and DTW) in Hawaii also should be constrained to a particular structure, such that the ability of the different types of wholesale gasoline prices to fluctuate relative to each other would be restricted. In its report ICF offers the PUC little explanation, and no analysis for this significant departure from the original legislation. In my opinion, there is no underlying economic reason or basis that would require the relationships between different types of wholesale prices to be fixed or regulated, even within an environment in which wholesale gasoline prices in general are capped.

IV. The ICF Gas Cap Proposal

ICF's proposed structuring and regulation of the wholesale gasoline market in Hawaii is based on two premises: (1) all wholesale gasoline prices in Hawaii should be determined and driven by an "import parity price," which ICF has defined as the average of the cost of gasoline

[17] As noted above, ICF is now apparently abandoning its earlier proposal to impose separate price caps on bulk and unbranded rack sales, though ICF is apparently still proposing to impose separate price caps on branded rack and DTW sales.

from Singapore and the Caribbean plus the average of (certain) costs (such as transportation and terminal costs) associated with importing gasoline from those two areas into Hawaii, and (2) existing price differences between various classes of trade within the wholesale gasoline business in Hawaii are not competitive and must be altered to reflect differences that exist in other markets that have completely different demand conditions and supply logistics.[18]

ICF's recommendation for the import parity price reflects unrealistic assumptions about the economics of importing gasoline to Hawaii and creates disincentives inconsistent with its own assumptions. ICF's recommendation related to price differences between various classes of trade are arbitrary, do not make any adjustments for factors unique to Hawaii, are based on prior year data and therefore do not reflect up-to-date supply and demand conditions in even the benchmark areas, and generates caps that are inconsistent with market realities even in the benchmark areas that ICF deems reflect "competitive" prices.

Import Parity Price

ICF's premise that all wholesale prices should be determined by an import parity price ignores the fundamental fact that imports of gasoline to Hawaii are rare. As a result, ICF must make assumptions and estimate many of the costs associated with such imports. In my opinion, there are a number of important issues related to the source of the imported gasoline, the price of

[18] ICF indicates that the relative stability of prices in Hawaii compared to the mainland "can indicate a market that is not efficient." ICF Report at 74. But, ICF is inconsistent on whether price volatility is even desirable. At another point in its report, it notes the importance of designing price caps to protect consumers from volatility in other markets. ICF Report at 25. DBEDT warns that price spikes experienced in other markets may be a consequence of pegging Hawaii's price caps on prices in other more volatile markets. When a supply interruption in a baseline area causes prices to spike in that market, prices in Hawaii are likely to spike higher than they would in the absence of price caps. Moreover, ICF has presented no analysis of prices in Hawaii or on the mainland for the purposes of identifying whether prices are "competitive." For instance, an equally plausible explanation for the relative stability of gasoline prices in Hawaii is that Hawaii's isolation insulates it from supply and demand shocks that on the mainland results in supply being diverted from one market to another, with prices in both areas being affected. This insulation from supply and demand shocks in other markets does not, by itself, indicate that Hawaii's prices are not competitive.

the imported gasoline, the quality of the gasoline, the costs associated with transporting and storing the gasoline, as well as others, that are not properly analyzed by ICF.[19] Rather, a series of unsupported and undocumented assumptions are made to construct the cost of imported gasoline into Hawaii. In addition, in order for such imports to be economical, it would be necessary for vessels carrying the imported gasoline to return from Hawaii with marketable product for sale in some other export market.[20] Despite the lack of imports of gasoline to Hawaii, ICF criticizes the legislature's proposal of calculating the "baseline price" based on three mainland markets because "realistically there is little if any likelihood that cargoes would ever move from any of these sources into Hawaii" and that the mainland markets "do not represent a true alternative, or market source for gasoline for Hawaii."[21] Instead, ICF chooses Singapore and the Caribbean to base an import parity price because they contend these areas represent "likely potential sources of gasoline into Hawaii."[22] The ICF methodology, however, generates an import parity price too low to attract imports from one of its two selected sources of gasoline – the Caribbean. Additionally, the gasoline refined in Singapore generally differs from the gasoline consumed in Hawaii and, therefore, could not regularly be imported to Hawaii for consumption.

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[19] Indeed, after its original report was submitted to the PUC, ICF admitted that the import parity price calculation should include an adjustment for inventory carrying costs. ICF Response to CA-IR-1. But ICF has apparently not similarly acknowledged the appropriateness of other adjustments, such as an adjustment for the "significant price risk" associated with importing that ICF acknowledged (at p. 14 of its initial Report) but did not reflect in its original "import parity" calculations.

[20] In comparing its own estimated freight costs from the USGC to Hawaii to the 4 cpg freight cost assumed by PUC, ICF acknowledges that its estimate might be low because of "limited ability to load other products on these vessels when they leave Hawaii." ICF Report at 21. In its calculation of the freight cost used in its calculation of an import parity price, ICF apparently makes no adjustment for the limited ability to "optimize the vessel utilization." ICF Report at 21-22.

[21] ICF Report at 17.

[22] ICF Report at 19. ICF's rationale for adding 1 cent per gallon to the import parity price to arrive at the capped bulk price is to "provide a margin incentive for importing" and that the capped price is at a level to "compete with imported supply." ICF Report at 34.

ICF states elsewhere that "the import parity mechanism is intended to identify a consistent, replicable, and market based pricing mechanism, and not a specific operational alternative to a marketer."[23] If these are the criteria used to calculate an import parity price, then ICF's proposed price must fail, as there are no transparent spot prices available for sales in the Caribbean.

a. ICF's Basis for Calculation of the Import Parity Price Does Not Appear Internally Consistent

As a starting point for its proposed wholesale gasoline price caps, ICF estimates what it terms an "import parity" price. This price is according to ICF, alternatively, a "virtual" import price that does not necessarily reflect the sources of imported gasoline, but is desirable because the data used to calculate the price is available and "reliable," or the import parity price is the price of imported gasoline from "likely potential sources...into Hawaii." Neither of these two explanations for ICF's definition of the import parity price fits well with available facts. First, ICF acknowledges that there is no available data for prices of gasoline produced and sold in the Caribbean; indeed, ICF must estimate this price in its own calculation of the import parity price as the U.S. Gulf Coast spot price less one cent. ICF provides no data or analysis and does not identify the sources of information from which this estimate of Caribbean prices was based.[24]

ICF's alternative explanation, that the calculated price reflects the cost of imports into Hawaii from these two "likely" sources, is also belied by ICF's recent admissions that its calculation of the import parity price does not take into account all of the relevant costs of importing. ICF now admits that in its calculation of freight to Hawaii, it has not estimated and

[23] ICF Response to CHEV-IR-11.
[24] ICF Response to CHEV-IR-13 (a).

does not know the extra expense that would be incurred if backhauls from Hawaii were either not available or had to be arranged.[25] ICF noted in its report that in order for imports to be economical it is necessary to import cargoes of significant size to minimize freight costs, which it acknowledges "creates logistical issues" and "significant price risks."[26] ICF makes no allowance for these costs in its import parity price formula and presents no estimates of the magnitude of these additional costs.[27]

The import parity price plays an integral role in ICF's proposed caps – all wholesale gasoline prices will be determined by adding an estimated wholesale margin, grade adjustment, and location adjustment to this price. Yet, ICF offers no cogent explanation for the construction of this price.

b. Under the ICF Proposal Imports from the Caribbean Would Not Realistically Occur

ICF calculates an import parity price based on the average of spot prices in Singapore and the Caribbean. Inspection of the data used by ICF shows that the Singapore price generally is lower than the price in the Caribbean, and indeed substantially lower, at least as ICF has measured it. Under these circumstances, at least as set forth by ICF, it would not make sense for Hawaii to import gasoline from the Caribbean because the import parity price serving as the basis for the gas cap price (the average of Singapore and the Caribbean) would be lower than the actual cost of importing gasoline from the Caribbean. For instance, the data presented in ICF's Exhibit 2.11 indicate that in 2004, the Caribbean spot price, plus transportation, as ICF has estimated it was, on average, 11.8 cents per gallon higher than the Singapore price plus freight

[25] ICF Response to CHEV-IR-15 (d).
[26] ICF Report at 14.
[27] ICF Response to CHEV-IR-10 (a).

and 5.9 cents per gallon higher than the import parity price, as ICF has calculated it.[28] ICF's method of calculating an import parity price leads to a situation in which imports from the Caribbean would be highly unlikely, and further constrains Hawaii's potential sources for gasoline supply by removing the Caribbean as an economical source for supply. In my opinion, this internal inconsistency demonstrates the ad hoc nature of ICF's proposal.[29]

c. The Gasoline in the Areas Chosen by ICF Differs from the Gasoline Consumed in Hawaii

ICF admits that the gasoline sold in the Singapore spot market is different from the gasoline consumed in Hawaii. ICF points out that "gasoline produced in Singapore, Taiwan, and Korea can have quality characteristics which do not fully align with the U.S. or Hawaii conventional gasoline" and that "Far East refiners are, in general," producing U.S. grade gasoline on "an exception basis."[30]

ICF produces no analyses or information related to the costs that would be incurred by Singapore refiners to produce gasoline that would meet U.S. specifications on more than "an exception basis."[31] For example, ICF does not address potential costs of capital to build required facilities to produce cleaner gasoline (less sulfur and benzene); increased operating costs, including higher energy consumption; costs of reduced yields as a result of producing cleaner

[28] ICF Report at 25.
[29] Exhibit 2 shows, over time, the Caribbean spot price plus transportation and the import parity price, both as ICF has defined and measured these prices. The Exhibit shows that over the period 1999 through April 2004, the Caribbean price was higher than ICF's Import Parity Price about 90 percent of the time and that the differences were as high as 12 cents per gallon.
[30] ICF Report at 18, 24. See also, ICF Exhibit 2.2, which shows various differences in the quality of gasoline produced in Singapore and gasoline consumed in Hawaii.
[31] ICF Response to CHEV-IR-12 (b).

fuel; or costs of segregating products given that tankage, pipelines and vessels to move the cleaner product has to be segregated and in some cases cleaned.[32]

Clear evidence exists indicating that gasoline produced to meet tighter environmental specifications sells at a price higher than conventional gasoline. For example, over the period 1998 to 2004, the spot price of reformulated gasoline sold on the U.S. Gulf Coast was, on average, nearly 4 cents per gallon higher than the spot price of conventional gasoline sold on the U.S. Gulf Coast.[33] Part of this price differential is attributable to different supply and demand conditions for the two types of gasoline, one of which is the higher costs associated with production of reformulated gasoline versus conventional gasoline.[34]

Price Cap on Bulk Sales

The legislation sets a single cap for wholesale gasoline sales. In its report, ICF proposed to complicate the price cap legislation by setting a different, and significantly lower, price cap for bulk sales, defined by ICF as "wholesale sales of gasoline in individual transactions which exceed the size of a truckload."[35] These sales, which according to ICF account for 32 percent of refinery sales in Hawaii, are made to oil companies without a local refining presence, major distributors and jobbers.[36] ICF offers no valid reason for this complication. There is no evidence, or even concern, of which I am aware, that the bulk price of gasoline is above

[32] In addition, ICF has not taken into account the potentially higher costs of producing gasoline that can be blended with ethanol.
[33] Exhibit 3 shows the average differences between spot prices of conventional gasoline in various markets, and the spot prices of gasoline produced to higher specifications, such as reformulated gasoline, so-called CARB gasoline produced according to the California Air Resource Board specifications, as well as others. The exhibit shows that gasoline produced to achieve higher specifications is more costly to produce and therefore sells at a higher price than conventional gasoline.
[34] Data used in the ICF report to calculate the import parity price show that the spot price of gasoline on the U.S. Gulf Coast exceeds the spot price of gasoline in Singapore. ICF Report at Exhibit 2.3. ICF does not address the reasons for the difference in spot prices or how much of the difference is attributable to the higher quality, and therefore higher price, of gasoline in the U.S. relative to Singapore.
[35] ICF Report at vii.
[36] ICF Report at 30.

competitive levels. Beneficiaries of ICF's bulk price cap would be oil companies like Shell and other companies that, unlike Chevron and Tesoro, have chosen not to make the investment in refining operations in Hawaii. There is no indication that the legislature intended to achieve such a result and there is no indication that such benefits would be passed on to consumers. As noted above, ICF apparently has reevaluated its position on bulk price caps and recommends that such caps be eliminated. I agree with this recommendation.[37]

Mainland Benchmarks for Rack and DTW Prices

ICF proposes that wholesale prices in Hawaii should be based on average wholesale prices reported for an arbitrarily selected set of geographic areas on the mainland.[38] ICF recognizes the importance of geographic specific supply and demand factors in determining gasoline prices; yet ICF offers no analysis or empirical evidence that the supply and demand factors in the markets they have chosen as benchmarks for Hawaii relate to the supply and demand factors in Hawaii. ICF even admits that wholesaling costs may be higher in Hawaii than in some of the areas they examined.[39] The very benchmarks they have chosen demonstrate wide

[37] ICF's proposed price cap for bulk sales (which was set at "import parity" plus one cent per gallon) was apparently premised on the theory that generally, such bulk sales are made at spot prices and therefore, at least to the extent the import parity price measured by ICF is a proxy for such a spot price in Hawaii if a spot market in Hawaii existed, bulk sales in Hawaii generally should transact at about the spot price. The additional one cent per gallon is, according to ICF, "a margin incentive for importing." ICF recognizes in the report that these sales typically take place between refiners and large buyers. Generally large buyers have some countervailing power that can be used to protect against attempts by sellers to extract higher than competitive prices. In Hawaii, this is even more likely to be the case since, as ICF has noted, bulk sales are not a trivial amount of their overall sales and if bulk sales are not made locally, refiners must ship the product out of Hawaii, at considerable expense. Moreover, there is evidence that several non-refining wholesalers (with import capability) have been able to leverage that ability into low prices for "bulk" purchases of gasoline from on-island refiners.

[38] ICF calculates the average "margin" based on its selected benchmark areas on an annual basis and then doubles that margin to allow for flexibility in setting prices and responding to market conditions over the course of the year.

[39] ICF Responses to CHEV-IR-23 (d) and CHEV-IR-30 (f). ICF offers no explanation for why the higher costs in Hawaii should not enter into the gas cap formula other than the fact that it did not have sufficient data to estimate these costs for Hawaii or for the benchmark areas. ICF now concedes, however that "there should be an adjustment to reflect the issue of real estate costs and rent caps versus the Mainland." ICF Response to CHEV-IR-33. But it does not appear that ICF is taking account of other costs that are likely to differ as between Hawaii and the Mainland benchmark areas that it proposed in its Report.

variation in gasoline prices and margins across geographic areas that they have characterized as "competitive," demonstrating that geographic specific supply and demand factors can generate substantial variation among "competitive" prices. ICF does not present any rationale for basing Hawaii's wholesale prices on the average of those areas. It would be just as reasonable to take the maximum of the various areas or, if the cost of doing business in Hawaii is higher than the proposed benchmark areas, even the maximum plus some adjustment factor to reflect the higher cost of doing business.

a. No Consistent Set of Benchmarks

ICF uses different sets of benchmarks for its different proposed gas caps. ICF bases its proposed branded rack cap on an average of rack prices in eight cities in eight states. Its proposed unbranded rack cap is based on unbranded rack prices in five cities in five states. Its proposed differentials between regular grade, mid-grade, and premium rack prices, however, are based on prices in six cities in six states. In determining the proposed caps for DTW prices, ICF uses state-level DTW prices in five states (not the same five states where the five cities used for unbranded rack prices are located). Exhibit 4 shows the various geographic areas used by ICF to construct benchmarks for wholesale prices and margins in Hawaii. The exhibit demonstrates the inconsistency in ICF's chosen benchmark areas.

b. Data Contradict ICF's Rationale for Selection of Benchmark Areas

The limited explanation offered by ICF for the selection of prices in five states as benchmarks for Hawaii DTW prices appears to be contradicted by the volume data relied upon

by ICF.[40] ICF says that the five states (Florida, Georgia, Maine, Michigan and New York) were chosen because those states "have a significant volume of DTW business."[41] In fact, in three of the five states the percent of the gasoline sold in those states at the DTW price is quite low – and very different from Hawaii, as a percentage of total sales in the state. In one of the states, Maine, the data necessary to calculate DTW sales is not even reported by the U.S. Department of Energy, the source of data used by ICF to calculate the DTW price margins and proposed price caps.[42] The table below shows the percentages for Hawaii and the five benchmark states.[43] The percentages have been calculated based on total sales reported by the Department of Energy, which include refiners' sales to wholesale customers as well as to end-users (e.g. through company-operated stations) and based on sales to wholesale customers only. The two sets of results are consistent – sales through the DTW channel in three of the five benchmark states are substantially smaller than Hawaii and the required data to calculate a fourth percentage are not reported. ICF's stated rationale for choosing these states, therefore, does not appear to be consistent with these data.[44]

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[40] The only explanation for the selection of geographic areas used in the rack calculations is that the areas are "major" markets. ICF Report at 35. The markets include Albany, New York; Atlanta, Georgia; Dallas, Texas; Detroit, Michigan; Phoenix, Arizona; Portland, Maine; Seattle, Washington; and Tampa, Florida. While some of these areas may qualify as "major" markets (e.g. Atlanta, Dallas), others clearly are not (e.g. Albany, Portland) and other clearly "major" markets are not represented (e.g. Houston, Boston, etc.) ICF also states that data availability also was a consideration in choosing the benchmark areas. CHEV-IR-30(b). This, however, would not explain why other "major" markets would not be equally plausible. By basing a price cap on areas simply because data was available for those areas as opposed to those areas being representative of a competitive outcome in Hawaii, ICF does not consider the potential ramifications of its proposed price caps on this important sector of the economy in Hawaii.

[41] ICF Report at 40.

[42] The DOE reports a "W" for DTW sales in Maine, indicating that the sales data is withheld for confidentiality reasons. See Petroleum Marketing Annual, 2004.

[43] I also noted that ICF purportedly excluded Texas from its DTW analysis because of a "very low level of DTW sales in the state," which they quantified as "under 5% of sales." If ICF had consistently applied such a rule, Georgia also would have been excluded from ICF's analysis (as it was not).

[44] Exhibit 5 shows the percent of gasoline sold through direct served stations at DTW prices, by state, for those states where data was reported. The exhibit shows that among the 23 states for which data was available, the states selected by ICF rank 7th (New York), 17th (Florida), 20th (Michigan), and 23rd (Georgia). ICF calculates DTW margins only on conventional gasoline because apparently, at least until ethanol is added to Hawaii's gasoline, gasoline in Hawaii is conventional. In four of the five benchmark states, only conventional gasoline is sold. In New

Percent Gasoline Sold at DTW in Hawaii and in
States Selected by ICF As Benchmarks for Hawaii
Based on U.S. Department of Energy Data Used by ICF
2004

	DTW Sales As Percent of All Sales To End Users and For Resale	DTW Sales As Percent of Sales for Resale
Hawaii	33%	44%
Maine	Data Not Reported	Data Not Reported
Georgia	2%	3%
Michigan	8%	10%
Florida	13%	17%
New York	32%	42%

c. ICF's Selected Areas Cannot Be Used as a Benchmark for Hawaii

In various parts of the report, ICF notes the importance of recognizing that local supply and demand factors affect prices and margins.[45] However, with respect to the selection of benchmark areas, ICF provides no analysis or information that supports its choice as reflecting areas that are similar to Hawaii in any relevant dimension. This is a fundamental flaw in ICF's recommendation.

ICF acknowledges that Hawaii is small and geographically isolated.[46] Yet it ignores the implications of these factors in its analysis, in particular fundamental and obvious differences that arise from those characteristics between Hawaii and the geographic areas that ICF has chosen as its benchmarks. Unlike any of the geographic areas chosen by ICF as benchmarks for

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York, only about 25 percent of the gasoline sold through the DTW channel is conventional, so while 32 percent of the sales in New York are at the DTW priced, ICF's margin for New York is based on only 8 percent of the gasoline sold in New York.

[45] See, for example, ICF Report at page 53 ("Rack margins for Premium gasoline versus Regular Unleaded will vary over time based on *regional supply and demand competitive factors* regarding the supply of higher octane products."), page 40 ("As with the Rack margins, the *DTW margin can vary based on market conditions*."), and page 49 ("PADD 5 information is highly influenced by California's gasoline market, in terms of *demand and quality*.").

[46] ICF Report at 5.

Hawaii, Hawaii is located in the middle of the Pacific Ocean, it is not linked to other gasoline markets by pipeline or truck, shipping occurs via tankers at high cost, the size of the overall market is small, the local refineries that supply the market are small and produce a slate of products different than mainland refiners, there are no spot markets nearby, as well as other factors.[47] One would expect that these factors would cause prices in Hawaii to be higher than in ICF's chosen benchmark areas. ICF now acknowledges that it has not addressed these obvious differences between Hawaii and the benchmark areas in calculating the proposed caps. ICF now admits that it would adjust the calculated marketing margins for relative land values and rent caps in Hawaii, and that determination of these adjustments would require "further data and analysis."[48]

The data used by ICF to calculate benchmark wholesale gasoline margins demonstrate the flaw in ICF's methodology. The data show that gasoline prices and margins outside of Hawaii exhibit substantial variation. In 2002, the rack margin in Seattle was approximately 21 times the margin in Tampa; in 1999, the rack margin in Phoenix was approximately 6 times the margin in Albany; and in all the years for which ICF reported DTW margins, the margins in Maine were higher than any of the other states that ICF included in its set of selected Hawaii benchmarks.[49]

The variation in the calculated margins occurs because the supply and demand factors that determine prices, and therefore margins, are different across geographic areas. ICF attempts

[47] See Exhibits 6 and 7 for a comparison of selected data for Hawaii and the benchmark areas used by ICF and petroleum products produced at Hawaii refineries versus refineries in the U.S., respectively.
[48] ICF Response to CA-IR-1.
[49] Exhibit 8 shows the variation in rack margins for those areas selected by ICF as benchmarks for Hawaii and Exhibit 9 shows the change in rack margins on a year-to-year basis for those areas. These exhibits demonstrate that margins in those areas selected by ICF are highly variable across the areas and across time. In my opinion, this variability and volatility suggests that using one of these areas as a proxy for another area is not realistic. Similarly in my opinion, it is not appropriate to average these margins together and expect them to be a reliable proxy for Hawaii.

to impose an average margin on Hawaii sellers, where the components of that average margin are reflections of the different supply and demand conditions in those markets. In my opinion, without considering and adjusting for those conditions, the calculated benchmark margin or price becomes meaningless. It simply is an arbitrary number that reflects some amalgamation of different conditions in different markets. It would be only happenstance that such a number would have some relationship to a "competitive" margin in Hawaii. In my opinion, it is misleading to suggest that such a method would "permit a market based value for gasoline for refiners and suppliers" in Hawaii.[50]

d. Other Mainland Margins Produce Different Results

ICF's method of selecting various mainland DTW margins and applying such margins to Hawaii could of course be implemented with a different set of geographic areas, and the resulting margins, and therefore the caps, will be different. As discussed above, ICF has done no analysis to support either its selection of benchmark states (or cities in the case of the rack margins) or an average of those benchmark states. Also, as discussed above, there is substantial variation among the margins in the benchmark areas (both DTW and rack) as calculated by ICF.

If ICF had selected only one of the DTW benchmark areas, the calculated cap would be substantially different. ICF contends it chose to average the margin in multiple areas because "dependence on any one location, even if it would be judged to mirror Hawaii, could lead to annual caps in Hawaii impacted by local supply anomalies."[51] This explanation, however, relates to variability in the margins over time within an area. It does not explain why the marketing margin in the Hawaii price cap should be based on the average of benchmark areas that exhibit very different margin levels. For instance, in Maine, DTW margins (as calculated by

[50] ICF Report at ii.
[51] CHEV-IR-30 (d).

ICF) are consistently higher than the DTW margins in other benchmark states; in 2004, the DTW margin reported by ICF for Maine is 7 cents per gallon higher than the Florida margin, 4.3 cents per gallon higher than the Georgia margin, 4 cents per gallon higher than the Michigan margin, and 2.1 cents per gallon higher than the New York margin. ICF offers no explanation for such difference. Using Maine as the benchmark, rather than the average of the five states, would increase the DTW margin calculated for 2005 DTW prices in Hawaii from 15 cents per gallon to 22 cents per gallon.

Alternatively, if ICF had relied on a gasoline product more similar to the product that will be produced and sold in Hawaii after April 2006, the DTW margin and price cap in Hawaii could be measurably different. For example, New York is one of the five areas chosen by ICF as a benchmark area for DTW prices, and the only one of the five areas chosen by ICF that had a substantial percentage of wholesale sales made at DTW prices in the state (and a percentage comparable to Hawaii), which was ICF's stated rationale for selecting these five states. If ICF had elected to use the reformulated gasoline margin rather than the conventional gasoline margin in New York, the DTW price cap calculated for 2005 prices in Hawaii would be 39 cents per gallon, rather than 15 cents per gallon.[52]

As noted above, ICF's stated rationale for selecting the five geographic areas used in the analysis is that, in those five states, there is a substantial amount of gasoline sales made at the DTW price. While ICF's selection does not appear consistent with the stated rationale, it is possible to find five markets with substantial sales at the DTW price and implement ICF's own methodology to calculate caps based on an average of five such states. The table below shows

[52] If the average of the conventional and reformulated margins for New York were used, the price cap would be 34 cents per gallon rather than 15 cents.

five states where the share of sales at DTW prices comprises both (1) a relatively large percentage of total sales for resale and (2) a percentage similar to the percentage in Hawaii.[53]

Percent Gasoline Sold at DTW in Hawaii and in
States With Relatively High Percentage of Sales at DTW
Based on U.S. Department of Energy Data
2004

	DTW Sales As Percent of Sales for Resale
Hawaii	44%
District of Columbia	100%
California	62%
Maryland	43%
New York	42%
New Jersey	32%

In its report, ICF laid out its method of calculating DTW margins. I had my staff implement ICF's methodology in these five states, using the same source for DTW price data, the same spot prices, the same transportation costs, and the same underlying assumptions that ICF used in its calculations of DTW margins.[54] A weighted average of both conventional and reformulated gasoline was used when the two different products are sold in a single state. The calculated gas caps based on these five states are substantially different from those calculated by ICF. In 2004, the DTW price cap calculated by ICF, based on Florida, Georgia, Michigan, Maine, and New York is 15 cents per gallon; while in that same year, using California, New Jersey, Maryland, New York and the District of Columbia, the cap would be about 25 cents per gallon.

[53] The five markets selected for this alternative calculation, like those chosen by ICF, do not represent the U.S. geographically. That is, the ICF DTW benchmark areas do not include any states in the west and the five alternative benchmarks do not include any in the mid-west.

[54] Exhibit 10 shows the spot prices, transportation costs, and other costs used in these calculations. The methodology is the same as the methodology used by ICF.

A summary of these alternative calculations is shown in the table below. None of these alternative calculations are intended to be a proposed alternative to ICF's calculated DTW price caps, but they demonstrate the arbitrariness of the ICF method itself. Selecting arbitrary areas, or averages of a group of arbitrarily selected areas and calculating an average DTW margin can produce a wide variety of results. ICF admits that it assumed that if five different areas were chosen that different caps would have resulted, yet ICF conducted no analysis of the supply and demand factors that determine DTW margins in a given area.[55] Because ICF ignored the difference between supply and demand factors in the areas chosen by ICF compared to Hawaii, I believe that ICF's calculations have little or no relevance, and certainly are not good indicators of what a "competitive" margin in Hawaii would be.

Examples of Alternative DTW Price Caps
Calculated Consistent with ICF Methodology But Different Selected Benchmark Areas

Benchmark Area	Selection Criteria	Gasoline Type	DTW Cap
ICF Proposed DTW Cap			15 cpg
Maine	One of the five areas selected by ICF.	Conventional	22 cpg
New York	One of the five areas selected by ICF, and the only such state that meets ICF's stated selection criteria.	Reformulated	39 cpg
Average of five states	CA, MD, NY, NJ, and DC. Five states that meet ICF's stated criteria.	Weighted average of conventional and reformulated	25 cpg

The alternative calculations summarized above demonstrate that using ICF's own proposed methodology, marketing margins (and therefore price caps) can vary significantly across different geographic areas that are all considered sufficiently "competitive" to be used as

[55] ICF Response to CHEV-IR-30 (c).

benchmarks. This implies that such competitive margins in certain areas (e.g. Maine) can significantly exceed ICF's calculated margins and still be "competitive." The same logic applies to Hawaii; that is, if a 22 cent per gallon result based on Maine is consistent with competitive margins, then a comparable margin in Hawaii should not be condemned as supracompetitive.

Moreover, all of ICF's analysis is based on margins calculated on a cent per gallon basis. Such an approach can obscure the fact that economies of scale can be significant. In addition to costs that vary with the quantity of goods sold, there are certain fixed costs associated with marketing gasoline. For example, the physical cost of building a retail outlet and installing pumps is largely independent of the volume of gasoline sales. Those fixed costs have to be amortized over the volume of goods sold. As a result, the cost per unit is likely to be higher in low volume areas compared to high volume areas. Economic analysis suggests that one reason why the cents per gallon margins relied on by ICF are likely to vary across different areas, wholly unrelated to any potential exercise of market power, is that the volumes in those areas are different. Similarly, it is fundamental that the cost of doing business is higher in certain areas than in others, due to differences in wage rates, land values as well as other costs. As a general matter, prices in Hawaii for a wide variety of goods and services are higher than prices on the mainland, again for reasons unrelated to any potential exercise of market power. ICF's proposal, that the Hawaii price caps should be set based on average margins in selected mainland areas, ignores reasons one would expect that, even in a competitive market, margins and prices would be higher in Hawaii than in those mainland areas used in its calculations.

e. No Consideration or Analysis of Ethanol

ICF concedes that the method and data used in its proposed wholesale price caps do not in any way incorporate the additional costs that will be incurred as a result of the legislative

mandate to sell gasoline blended with ethanol by April 2006.[56] In its responses to interrogatories to the Consumers Advocate in this matter, ICF now recommends that, given the scope of the ethanol issue and the time required to fully understand how this requirement will affect gasoline costs, the gas caps should be implemented only on a "calculation and monitoring" basis until the ethanol requirement is "in place and functional."[57] In its Report, ICF calculated benchmark gasoline DTW margins based only on conventional gasoline and did not perform any analysis of DTW margins for gasoline blended with ethanol or for gasoline blended with any other oxygenate.[58]

The EIA data relied upon by ICF indicate that DTW margins earned on the sale of reformulated gasoline, and on reformulated gasoline blended with ethanol, typically are higher than similar margins for conventional gasoline. For example, in New York, one of the five benchmark states selected by ICF, the Department of Energy collects and reports data for both conventional gasoline (used by ICF) and for reformulated gasoline that is blended with ethanol.[59] Reformulated gasoline blended with ethanol is sold in New York City and surrounding areas and represents about 75% of gasoline sold at DTW prices, while conventional gasoline is sold in other parts of the state and represents only about 25% of gasoline sold at DTW prices. In 2004, ICF's calculated DTW margin for conventional gasoline in New York is 8.9 cents per gallon. Using the same set of assumptions regarding transportation costs, but using the reformulated DTW price and the reformulated gasoline spot price in New York Harbor, the DTW margin for

[56] http://www.hawaii.gov/dbedt/ert/ethanol.html.
[57] ICF Response to CA-IR-1.
[58] Indeed, one criteria that ICF says that it used to select its benchmark areas was that they sold conventional (not reformulated) gasoline. However, gasoline sold in some of the metropolitan areas for which rack margins calculated by ICF as benchmarks for the rack margin in Hawaii is reformulated gasoline. For example, Phoenix, Arizona was a federally mandated RFG area under the Clean Air Act as early as 1997 and in 1998, the EPA approved the Arizona Governor's petition to opt out of the federal RFG program so that Phoenix could adopt even more stringent gasoline specifications. Also, in 2005, Atlanta was reclassified as a "Severe" ozone non-attainment area and RFG is required as of January 1, 2005. See http://www.epa.gov/OMSWWW/rfg/whereyoulive.htm.
[59] See http://tonto.eia.doe.gov/oog/info/state/ny.html

the blended gasoline product in New York is 19.6 cents per gallon. The difference between these two margins reflects not only the fact that the blended gasoline is sold in a different geographic market (New York City) than the market in which conventional gasoline is sold (other areas in New York state), but also the higher distribution costs that must be covered with the blended gasoline product. Since ethanol and gasoline must be blended in the truck that delivers the gasoline to the retail station, additional costs associated with storage facilities, blending equipment, and the blending activities themselves must be covered by the DTW margin for ethanol-blended reformulated gasoline. Because ICF has not addressed these issues, but instead focuses only on conventional gasoline, its analysis is largely irrelevant to the Hawaii market that will exist after the ethanol mandate is in effect – about seven months after the wholesale price caps are scheduled to go into effect.[60]

f. Retail Margins in Hawaii are Higher than Retail Margins in Proposed Benchmark Areas

If ICF's method of calculating price caps were reliable, one would expect that application of its method to some sector in Hawaii considered "competitive" would produce a margin close to the margin in that sector in Hawaii. For example, according to ICF, "prior studies indicate that there is sufficient competition at the retail [gasoline] level in Hawaii," and the legislature, by eliminating price caps on retail gasoline prices, apparently concurs with this finding. If the retail gasoline market in Hawaii is competitive, then (if ICF's reasoning were correct) the retail margin in ICF's five benchmark states should be reasonably close to the retail margin in Hawaii if the supply and demand conditions in those states were sufficiently similar to Hawaii's to use those

[60] Reformulated gasoline used as a blendstock for the blended gasoline and ethanol typically is more expensive to produce than conventional gasoline. These higher costs are reflected in the spot price of reformulated gasoline and therefore should not affect the DTW margins calculated for New York. Obviously, after ethanol is required in Hawaii, the import parity price, as calculated by ICF, should reflect this higher valued blendstock. As discussed above, ICF has based the import parity price on gasoline that does not currently meet U.S. specifications. This problem may become even more serious after blended gasoline and ethanol is required in Hawaii.

states as benchmarks. In fact, retail margins in Hawaii are substantially higher than the average in the five states selected by ICF, as shown in the following Table. Thus, there must be competitive reasons for higher retail margins in Hawaii – higher costs, less elastic demand, or other reasons. The existence of these reasons means that these states cannot be used as benchmarks for wholesale prices in Hawaii.

Comparison of Retail Margins in Hawaii
And in Those Areas Selected by ICF as Benchmarks for Hawaii
2004

	(cents per gallon)
Hawaii	22.3
Florida	10.0
Georgia	8.9
Maine	12.4
Michigan	11.2
New York	5.4
Average	9.6

g. ICF Zone Adjustments Lead to Some Marketers' Pricing Below Cost

ICF recommends imposing a single zone price adjustment for each of the eight zones specified in the legislation, equal to the average actual cost incurred to transport gasoline to the outer zones and to store the product once delivered to the zone prior to sale at the rack or delivery to stations.[61] Basing a zone price adjustment on *average* costs to service that zone generate three concerns. First, suppliers whose costs are above the average may be forced from the market; second, stations that are costlier to supply may suffer from supply shortages; and third, imposing a cap equal to the "average" cost may result in cross-subsidization, with lower than average cost areas subsidizing higher than average cost areas.

[61] ICF Report at 61.

Generally, different firms will have different costs of supplying a given area, whether because of differences in their customer or product mix or because of differences in their volumes of business. By definition, an average implies that some sellers' transportation and storage costs are higher than the average and some sellers' costs are lower than the average. ICF recognizes that the recommendation to use the *average* cost "may benefit some suppliers and penalize others."[62] ICF contends that the caps, based on such averages, will provide an incentive for these high cost suppliers to reduce their costs.[63] ICF does not explain, and indeed it is difficult to understand, why the opportunity for higher profits would not provide those incentives in a world without the gasoline caps. It is more likely that the high cost suppliers will be forced from the market. ICF, itself, recognizes this as a potential outcome and cautions that because the "total number of suppliers in Hawaii is small to begin with, the attrition of any marketers due to the Gas Cap impact needs to be quickly understood to minimize supply issues to consumers."[64]

Even if all suppliers are equally efficient, it is likely to be the case that the costs to supply all stations within a zone are not identical. If that is the case, using an average cost may generate either cross-subsidization or supply shortages to certain stations, depending on the costs to deliver to that particular station. In an extreme case, a supplier may elect to stop servicing a high cost customer or area entirely, rather than sell at a price that reflects only the average cost of doing business. ICF also recognized this possibility and indicated that "the PUC may wish to consider some exceptions or further adjustments" for situations of "high-cost-to-deliver regions."[65]

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[62] ICF Report at 3.
[63] ICF Report at 3 and 75.
[64] ICF Report at 75.
[65] ICF Report at 75.

The construction of the zone differential on the basis of averages guarantees that certain marketers' costs will be above the zone adjustment recommended by ICF. Any reduction of competitors in a market where the total number of suppliers already is small could potentially reduce competition – an outcome at odds with the legislature's original intent.[66] In addition, if certain stations in "high-cost-to-deliver" areas no longer are dependably supplied, station owners and gasoline consumers in those areas will be harmed, not benefited, from the gas cap legislation.

h. No Basis for the Proposed Grade Differentials

ICF proposes to restrict the differentials between the prices of regular unleaded gasoline and the prices of mid-grade and premium gasoline by setting mark-ups from regular unleaded gasoline for mid-grade and premium gasoline. ICF proposes different mark-ups for each "class of trade." Bulk mid-grade gasoline is proposed to be capped at 2 cents per gallon more than the capped bulk regular unleaded price; bulk premium gasoline is proposed to be capped at 6 cents per gallon more than the capped bulk regular unleaded price.[67] Similarly, mid-grade and premium rack prices are to be capped at 4.2 and 9 cents per gallon more than the capped regular unleaded rack price, respectively and the mid-grade and premium DTW prices are to be capped at 6.5 and 10 cents per gallon higher than the capped regular unleaded DTW price, respectively.[68]

Each set of price caps for mid-grade and premium prices in Hawaii are based on averages of grade differentials for other markets. For example, the proposed caps on mid-grade and premium bulk sales are based on an average of differentials for U.S. Gulf Coast and Singapore

[66] ICF recognizes that the objective of the legislation was to create conditions such that prices "correlate with competitive market conditions." ICF Report at ii.
[67] ICF Report at 57.
[68] ICF Report at 57.

spot prices – adjusted by ICF to approximate the different types of gasoline sold in those markets compared to the gasoline sold in Hawaii. Likewise, ICF's proposed caps for mid-grade and premium rack prices are based on an averages of six mainland cities[69] and ICF's proposed caps for mid-grade and premium DTW prices are based on averages of five mainland states.[70]

As with the DTW and rack margins, grade differentials vary across the various areas used by ICF as benchmarks. For example, in 2004, the difference between the mid-grade DTW and the regular unleaded DTW across the five states varied from 4.6 cents per gallon to 8 cents per gallon. ICF has neither investigated nor analyzed the reasons that prices of the different grades vary across locations, and has offered no explanation as to why the grade differentials in Hawaii should be set to the average of the grade differentials in these five states. As discussed above, the prices of gasoline – of any grade – are set depending on the supply and demand conditions present in the market in which they are sold.[71] ICF acknowledges that these spreads will vary over time "based on regional supply and demand competitive factors regarding the supply of higher octane products,"[72] but does not apply this same logic to the variability of the spreads across different geographic areas.

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[69] The six cities include Albany, New York; Atlanta, Georgia; Dallas, Texas; Detroit, Michigan; Portland, Maine; and Tampa, Florida. Seattle and Phoenix were used as benchmarks by ICF to calculate branded rack margins but were excluded from the grade differential calculations. Atlanta is included in the grade differential calculation, but is not included in ICF's calculated unbranded rack margin.

[70] The five states include Michigan, Maine, Florida, Georgia and New York.

[71] One factor that could have been (but was not) analyzed by ICF is the relative volumes of the different grades of gasoline sold in Hawaii versus the benchmark areas. According to Department of Energy data, 21 percent of the gasoline sold in Hawaii is premium gasoline, while a significantly smaller percentage is sold in most of the states used by ICF as benchmarks for Hawaii. Exhibit 11 shows the percent of premium gasoline sold in Hawaii, in the five states used as benchmark areas for the DTW grade differentials and for Texas. Texas is included in the exhibit because Dallas, along with five cities in the five states included in the exhibit, was used to calculate grade differentials for rack prices.

[72] ICF Report at 53.

V. Potential Consequences of Gas Caps As Proposed by ICF

It is my understanding that the intent of the price cap legislation is to address "supra-competitive" prices and margins earned on the sale of gasoline in Hawaii. In order to effectively deal with the problem of sellers setting prices above competitive levels, a price cap regime would allow the legitimate interplay of supply and demand in the market, but would constrain prices to eliminate any effect of sellers' market power. Given the methodological problems associated with ICF's proposal, and the lack of any analysis of the relevant supply and demand factors in its analysis, such "competitive" prices for Hawaii would be generated by ICF's proposed caps only by luck. To the extent that the caps interfere with the market forces at play in Hawaii, there will be unintended (though all too predictable) consequences for both those companies who supply gasoline to Hawaii and to consumers of gasoline in Hawaii. ICF itself explicitly recognizes the potential for such unintended consequences and warns the PUC that gas cap regulation may induce refiners, marketers and even other companies not involved in the gasoline or oil industry to act in ways that would not benefit Hawaii consumers or the Hawaii economy.

ICF acknowledges the proposed gasoline caps represent a "significant change" in doing business in Hawaii that could cause "some significant re-evaluation of assets and business by Industry participants" and will inevitably lead participants to "alter" their behavior.[73] ICF admits that these effects "are difficult to quantify" and warns the PUC to "examine" the effects on suppliers and consumers after six months of regulation.[74] ICF states "a forward look is not so readily determined."[75] I agree. To the extent that the proposed caps are binding, they certainly will act as a strait jacket on the gasoline market in the state. As market forces change, it will be

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[73] ICF Report at 5, 6, and 73.
[74] ICF Report at 5 and 7. ICF acknowledges that various consequences of its proposal are possible, but that it has done no analysis to determine the likelihood of any issues and it had not measured the costs associated with such issues.
[75] ICF Report at 73.

more difficult for the Hawaii gasoline market to adjust to those changes, and as a result, various distortions or dislocations in that market are sure to occur. The only issue is the severity of the dislocations. There is ample evidence that generally when price caps are imposed, such that prices are constrained and businesses cannot earn normal returns, shortages will occur. Such shortages are likely to occur in Hawaii resulting in product outages at particular stations.[76] Given that retail gasoline prices are not being regulated or capped, in the event of such shortages dealers who do obtain product will be in a position to take advantage of the situation by charging prices higher than they would charge without the wholesale gasoline caps. While those dealers may enjoy higher margins, such a situation would certainly be to the detriment of consumers in Hawaii. In this situation consumers are worse off due to the caps in two ways – the caps may lead to shortages, and prices will be higher with the caps than they would have been without the caps.

There are a host of circumstances, many difficult to predict, which could generate unfortunate unintended consequences for Hawaii consumers and for the Hawaii economy. For example, the on-island refiners may find imposition of the caps reduce their profitability to the point that it no longer makes economic sense for them to refine gasoline on the island.[77] While ICF describes the "higher fixed cost per gallon of sales" that Hawaii suppliers incur compared to mainland suppliers as a "fact," it has performed no analysis or quantification of this issue and it makes no predictions about whether the recommended margins are sufficient for the on-island

[76] ICF acknowledges that some of the results of price caps in other markets are "likely" to occur in Hawaii. ICF has listed the results of price caps in other markets as the "tendency to price at the cap, complex to administer, increased volatility in prices (due to link to markets which move daily), shortages at times, [and] propensity to "game" the system due to price lags." ICF Response to Tesoro-IR-58.

[77] ICF explicitly acknowledges that the local refiners may earn reduced profits due to the proposed caps and the mandated ethanol legislation and that these changes will "push Hawaii's refiners to closely examine refinery profitability and sustainability." ICF Report at 74.

refiners to continue producing gasoline on the island.[78] Closure of one or both of the local refineries would make Hawaii dependent on imported gasoline, possibly leading to higher prices of gasoline (as well as other petroleum products now produced at the refineries) and less secure supply for Hawaii consumers.

The use of spot prices outside of Hawaii as a basis for wholesale price caps also could lead to supply disruptions in Hawaii.[79] Without gas caps, refinery outages or other disruptions in local supply lead to increased prices that attract importers such that prices can return to normal levels relatively quickly. However, with caps, wholesale prices would not be allowed to increase in such situations and potential importers would have no incentive to send product to Hawaii. Such a situation could lead to gas shortages in Hawaii. Moreover, in such situations retailers would suffer from shortages and could raise the retail prices as demand outstripped supply, and Hawaii consumers would pay higher retail prices for a longer period of time since the caps would inhibit the price adjustment mechanism that would otherwise induce firms to bring additional product into the market.

Another potential consequence, also acknowledged by ICF, is that tying wholesale prices to spot prices outside of Hawaii may lead to price increases in Hawaii that have nothing to do with supply conditions in Hawaii. ICF states, "[T]here will however, be situations where the gasoline price rises in the Caribbean, or Singapore markets due to events local to those markets which could impact Hawaii consumers due to the formula."[80] In addition, ICF admits that the

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[78] ICF Report at 39.

[79] ICF agrees that such disruptions are possible. According to ICF, "outages at Hawaii refineries may locally affect Hawaii supply and inventory, but the Gas Cap would not change because Hawaii's problem likely will not impact the Caribbean, USGC or Singapore markets. More critically, if imports are needed to make up the lost volume, the inability to raise prices beyond the gas cap may blunt economic replenishment, and jeopardize supply." ICF Report at 8 and 76.

[80] ICF Report at 7-8.

"emerging growth in energy demand in Asia may likely tighten product markets" leading to higher prices there, which would affect gasoline prices in Hawaii.

While ICF anticipated some of these unintended consequences of its proposal in its Report, I believe that there are others that ICF missed. For example, if gasoline marketers in Hawaii find that, under the proposed caps, some distribution channels do not provide an economic return, they may reduce or eliminate sales through those channels. Under ICF's proposal, the margin on sales to branded jobbers on Oahu is three cents per gallon lower than the margin on unbranded sales and 8.3 cents per gallon lower than the margin on direct sales to dealers at DTW prices. If gasoline sellers cannot cover the costs associated with sales to branded jobbers under the proposed caps, a rational response would be to direct that product to unbranded jobbers or to branded dealers. Also, given that retail prices are not regulated, to the extent that refiners have company-operated stations, it also would be rational to redirect product to those outlets, to the extent it is possible. There are two possible consequences of such "redirected" product. One is that the caps would force changes in the distribution channels such that some channels would benefit at the expense of others. However, a second, and more serious, possible consequence is that distribution in some areas by any distribution channel simply would not be economical under the caps, a clearly unfavorable situation for the consumers in such areas.

There are other possible responses by sellers who cannot earn a normal return under a regime of capped wholesale prices. Sellers may look to other sources of revenue that are not regulated (surcharges, credit processing fees, etc.), services previously provided may be reduced or eliminated (reduced delivery schedules, advertising and marketing programs may be eliminated, etc.), or investment at service stations, terminals or refineries may decline or no longer be viable at all. Moreover, at least some sellers affected by the price caps, including

Chevron, sell gasoline at retail through company-operated stations. If such sellers cannot earn an economic return on their sales to dealers, but can earn such a return on retail sales through their company-operated stations, then it would make economic sense to divert investment dollars away from the independent dealers and toward the sellers' own company-operated stations.[81] These responses by sellers, as well as other possible responses, must be expected if the price caps prevent sellers from earning a normal economic return. A major problem with the ICF proposal is that ICF apparently made no attempt to ensure that such returns would be made and there is no mechanism after the caps are implemented to deal with such problems.

ICF's proposed caps also do not provide for multiple sales within a single distribution channel.[82] For example, Chevron sells gasoline at a "bulk" price to Aloha. Aloha, in turn, sells gasoline to Costco in Hawaii. Apparently, Aloha and Costco negotiate the terms of this sale. It is unclear, under ICF's proposal, whether secondary sales within a channel of distribution would be effectively eliminated or if those sales would not be subject to the cap, for example in instances of a large jobber selling to a smaller jobber.

Moreover, the fact that gasoline is not produced separately, but instead is only one of the outputs of the refining process (along with jet fuel, diesel, fuel oil, etc.) has several significant implications. First, to the extent that gasoline price caps limit the wholesale price of gasoline (and thus the profit margins that refiners can earn on sales of gasoline) but the prices (and margins) of other petroleum products are not capped, the on-island refiners may have some degree of incentive to shift their effort away from the production of gasoline and toward the

[81] Because retail prices are not capped, sales through a marketer's company operated stations are effectively immune from the price cap regulations, while sales through independent branded dealers and lessee dealers are subject to the wholesale caps. Consequently, the caps will have a greater adverse effect on marketers, like Chevron, who sell an appreciable fraction of its gasoline through non-company operated stations than on marketers, like Aloha, who sell most of its gasoline through company operated stations.

[82] CHEV-IR-25 (c).

production of other petroleum products on which they may be able to earn higher margins. There are obvious limits, both physical and economic, on their ability to do so. But at the margin, one would expect to see some effect on the supply of gasoline. Second, because gasoline has historically been the most profitable refinery product, price caps on gasoline are likely to have effects on overall refinery profitability, and thus are likely to have effects, not just on the gasoline market, but on the markets for other petroleum products as well. This is especially significant because much of Hawaii's electricity is produced by burning the fuel oil produced by the on-island refiners.

It is difficult to predict the particular consequences of the gasoline caps in Hawaii. Clearly, if the caps prevented only temporary or aberrational price increases in Hawaii, prices for the most part would be determined by the market and unintended consequences would be less likely to occur. On the other hand, if the caps lead to lower prices and margins on a regular basis (i.e., if the caps are "binding" on a regular basis) and if the caps lead to substantially lower prices and margins, the market will have to adjust to the lower earnings on the part of sellers in some way. If the past is any indicator of the future, ICF's caps will be binding a significant portion of the time, and thus the difference between market wholesale prices and capped wholesale prices will be substantial. ICF estimates that over the period 1999 through 2004, the difference between the average DTW price of unleaded gasoline on Oahu and the capped price is nearly 10 cents per gallon, about 38% of the estimated DTW margin for sellers in Oahu.[83] Similarly, the difference between the average rack price of unleaded gasoline on Oahu over that same period and the capped rack price is nearly 13 cents per gallon, over 66 percent of the rack margin.[84] If these historical results represent what is likely to occur when the caps are actually implemented,

[83] ICF Report at Exhibits 3.16, 3.21.
[84] ICF Report at Exhibits 3.11, 3.22.

it is highly likely that sellers in Hawaii will be forced to respond to the lower earnings as a result of the caps.

It would be one thing if ICF had estimated the effect of sellers' alleged market power on prices in Hawaii and set its caps accordingly, while still allowing for higher prices that are not due to market power (but instead are due to other factors such as the higher cost of doing business in Hawaii). If it had done so then to the extent that the caps turned out to be nearly always binding or that the caps led to substantial reductions in prices, one might conclude that the caps prevented sellers from exercising market power in Hawaii. However, ICF did not undertake such an analysis, and therefore neither ICF nor the PUC can be assured that there will not be serious and negative consequences of the proposed price caps in Hawaii.

VI. Retail Prices of Gasoline In Hawaii

Consistent with the legislation, ICF's proposal relates only to wholesale gasoline prices, not to retail gasoline prices. ICF clearly recognizes that even if the gasoline caps succeed in reducing wholesale gasoline prices in Hawaii, there is no assurance that retail gasoline prices will be affected, mentioning this issue in four different places in its report.[85] If the price caps result in lower wholesale prices that are not reflected in lower retail prices, then gasoline retailers may benefit from the caps, but consumers would not.

In connection with my work on the Hawaii gasoline antitrust case, my staff and I performed an analysis of the responsiveness of retail price changes to changes in wholesale prices in Hawaii. That study showed (using data over the period 1992 through 1998) that retail prices in Honolulu were more responsive to wholesale price increases than wholesale price decreases. The results show that when wholesale prices in Hawaii increased one cent per gallon,

[85] ICF Report at ii, 6, 47, 74.

over the next four weeks, retail prices increased 1.08 cents per gallon. However, when wholesale prices fell one cent per gallon, retail prices fell only 0.37 cents per gallon over the following four weeks. These results are summarized in Exhibit 12.

A similar analysis was performed for Los Angeles to evaluate the relative responsiveness of dealers in Hawaii to dealers in another location. That analysis shows retail dealers in both Los Angeles and Hawaii adjust their prices to wholesale price increases over a six-week period. However, retailers in Hawaii are slower to respond to wholesale price decreases compared to retailers in Los Angeles. Over a six-week period, retailers in Los Angeles had fully responded to a one cent per gallon reduction in wholesale prices; but retailers in Hawaii reduced their prices only 0.4 cents per gallon. The comparison of results for Honolulu and Los Angeles is summarized in Exhibit 13.

This analysis demonstrates that in Hawaii, retail prices are less responsive to reductions in wholesale prices compared to increases in wholesale prices. That is, given that historically Hawaii retailers have not fully passed through reductions in wholesale prices to Hawaii consumers, it is likely that it will be retailers, and not consumers, that are the main beneficiaries of the wholesale price caps.

VII. Conclusion

Any analysis of the imposition of caps on wholesale gasoline prices in Hawaii must weigh the likelihood of potential benefits with the costs of the program, including both the costs of administering it and the (much more significant) costs and risks associated with market distortions caused by the caps. ICF's proposed price cap system is complex and the simple calculation and posting of the relevant price caps will be a time consuming and costly

undertaking. ICF itself has described the amount of data necessary to implement the caps as "significant," including sale transaction invoices, date, location, quantity, price, grade, identity of buyer and seller, "etc." The original ICF proposal would result in the calculation of 96 different gasoline prices every week, and ICF recommends that a system be developed such that the weekly results can be reviewed "each week prior to issuance" to "protect against data or input errors." ICF states that "timing" of the gasoline caps is "critical" and that tracking the implementation process requires "data integrity," "security," and "visibility." While this part of the process is described with such words of warning, it may be the simplest part of administering the proposed price caps.

ICF's proposed program also will lead to substantial monitoring and enforcement costs for those transacting business as well as the PUC itself. ICF recommends that invoices be retained by buyers and sellers to provide information to the PUC for audit purposes and to facilitate "spot checking." While it is unclear whether ICF has considered the costs associated with adjudicating alleged violations of the gasoline caps, such costs are likely to be significant. It is difficult to predict now what types of issues the PUC will be forced to confront in administering the price cap system proposed by ICF. However it is not difficult to predict that disagreements between buyers and sellers will arise. Issues related to what the price cap should have been at a particular time and location, what price in a transaction is relevant to the cap, how a particular sale fits into the ICF price cap plan, as well as numerous others may become issues for which the PUC will be forced to spend time and resources arbitrating and ultimately delivering judgment.

The costs of developing, maintaining, administering, and enforcing the proposed price cap program must be weighed against the likely benefits to consumers in Hawaii as a result of

lower retail gasoline prices. ICF acknowledges retail price reductions may not occur even with its plan and the empirical analysis of the retail gasoline industry in Hawaii supports such a conclusion. Given the costs, the uncertain result, and the likelihood of unintended and detrimental consequences, I believe that the proposed price caps present clear risks to the gasoline suppliers in Hawaii, including refiners, bulk purchasers, jobbers, companies engaged in or connected with gasoline transport and storage, and retail gasoline operators, as well as to the PUC and consumers in Hawaii.

May 2005

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EDUCATION

Ph.D. (Economics)	University of Pennsylvania, 1975
M.A.	University of Pennsylvania, 1973
M.Comm. (Honors I)	University of Canterbury, 1971
B.A.	University of Canterbury, 1970

PRESENT EMPLOYMENT

Professor of Business Administration, Walter A. Haas School of Business, University of California at Berkeley, 1982- Holder, Mitsubishi Bank Chair in International Business and Finance, 1989-

Director, Center for Research in Management (CRM), University of California, Berkeley, 1983-1994

Director, Institute of Management, Innovation and Organization (IMIO), University of California, Berkeley, 1994-

PREVIOUS POSITIONS

Visiting Fellow, St. Catherine's College, Oxford University, and Oxford Institute for Energy Studies, Spring 1989

Associate Professor of Business Economics, Graduate School of Business, Stanford University, 1978-1982; Assistant Professor of Business Economics, Graduate School of Business, Stanford University, 1975-1978

Visiting Associate Professor of Economics, Department of Economics, University of Pennsylvania, 1978-1979

EXHIBIT 1

Assistant Lecturer in Economics, University of Canterbury, 1971

HONORARY DOCTORATES

2000	St. Petersburg State University, Russia
2004	Copenhagen Business School, Denmark
2004	Lappeenranta University of Technology, Finland

PROFESSIONAL AWARDS AND PRIZES

1973-1974	Penfield Traveling Fellowship in Diplomacy, International Affairs, and Belles-Lettres
1978	Mellon Foundation Junior Faculty Fellowship
June 1982	Esmee Fairbairn Senior Research Fellow, University of Reading, England
1989	Enterprise Oil Fellowship in Energy Economics, St. Catherine's College, Oxford University
1992	Distinguished Visitor, Policy Studies Group, Tokyo
1995	Elected Fellow, International Academy of Management
1998	Clarendon Lectures in Management Studies, University of Oxford
1999	Andersen Consulting Award for Best Paper in California Management Review
2002	Top 50 Living Business Intellectuals (Accenture Institute for Strategic Change)
2003	Viipuri International Prize in Strategic (Technology) Management and Business Economics, Lappeenranta University of Technology, Finland
2003	Strategic Management Journal Best Paper Award

EXTERNAL GRANTS

1971	William Georgetti Fellowship Award
1978-1981	National Science Foundation Grant (Consortium on Competitions)
1984-1987	National Science Foundation Grant (Consortium on Competitions)
1986-1992	Lynde and Harry Bradley Foundation Grant

1987-1988	Sloan Foundation Grant (Consortium on Competitions)
1987-1988	Japan-U.S. Friendship Commission Grant
1988-1991	Pew Foundation Grant
1989-1991	Smith Richardson Foundation Grant
1989-1992	Sasakawa Peace Foundation Grant
1990-1995	Sloan Foundation Grant (Consortium on Competitions)
1992-	U.S.-Japan Industry Technology Management Training Program Grant, U.S. Department of Defense/Air Force Office of Scientific Research (DOD/AFOSR)
1994-	Ameritech Foundation Grant - Consortium for Research on Telecommunications Policy
1994-	United States Information Agency Grant
1994-	Eurasia Foundation Grant
2001	CommerceNet Next Generation Internet Applications Center Grant
2004	Sloan Foundation Grant (Impact of Outsourcing on R&D) (with Henry Chesbrough)

PROFESSIONAL AFFILIATIONS

Prior

Editorial Board, *California Management Review.*

Editorial Board, *Strategic Management Journal.*

Editorial Board, *Human Relations.*

Co-director, Management of Technology Program, University of California at Berkeley.

Co-director, Nomura School of Advanced Management, Nomura-Berkeley Strategic Management of Innovation Program.

Member, Royal Economic Society.

Founder and Director, Consortium on Competitiveness and Cooperation

Member, Board of Directors, IQUANTIC Inc., 2000-2001.

Chairman, Board of Directors, Canterbury International, 2001-2002.

Chairman, Board of Directors, i-cap partners, 2000-2003.

Present

Co-editor and co-founder, *Industrial and Corporate Change* (Oxford University Press), 1999-.

Co-editor and co-founder, *Russian Management Journal*, 2003-.

Editorial Board, *Long Range Planning* (Sage Publications), 2000-.

Member, American Economic Association, 1975-.

Associate Member, American Bar Association.

Member, Licensing Executives Society.

Member, Council on Foreign Relations.

Member, International Joseph A. Schumpeter Society.

Member, Pacific Council on International Policy.

Member, The Benjamin Franklin Society.

Advisory Board, Endeavor - i-cap partners limited

Advisory Board, United States – New Zealand Council.

Co-founder – KEA, 2001-.

Fellow, International Academy of Management.

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BUSINESS AFFILIATIONS

Chairman, Board of Directors, Law and Economics Consulting Group, Inc., 1988-1998

Chairman, Board of Advisors, Law and Economics Consulting Group, Inc., 1998-2000

Chairman, Board of Directors, LECG L.L.C., 2000-2003

Chairman, Board of Directors, LECG Corporation, 2003-

Member, Board of Directors, Canterbury International, 2002-

Member, Board of Directors, The Atlas Funds, 1989-

Member, Board of Trustees, Atlas Insurance Trust, 1997-

Chairman, Board of Directors, Alkera, Inc., 2000-

Member, Board of Directors, New Zealand Australia Private Equity Fund, 2004-

PUBLICATIONS

ARTICLES

(1) "The Determination of Residential Land Prices in Some South New Zealand Cities" (with R. E. Falvey), New Zealand Economic Papers, 1972.

(2) "Time-Cost Tradeoffs: Elasticity Estimates and Determinants for International Technology Transfer Projects," Management Science, 23:8 (April 1977), 830-837. Reprinted in Strategy, Technology and Public Policy: The Selected Papers of David J. Teece, Volume II (Cheltenham, UK and Northampton, MA: Edward Elgar, 1998).

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(4) "Organizational Structure and Economic Performance: A Test of the Multidivisional Hypothesis" (with Henry Armour), The Bell Journal of Economics, 9:2 (Spring 1978), 106-122. Reprinted in J. Barney and W. Ouchi (eds.), Organizational Economics: Toward a New Paradigm for Studying and Understanding Organizations (San Francisco: Jossey-Bass, 1986). Reprinted in Economic Performance and the Theory of the Firm: The Selected Papers of David J. Teece, Volume One (Cheltenham, UK and Northampton, MA: Edward Elgar, 1998).

(5) "Integration and Innovation in the Energy Markets," Advances in the Economics of Energy and Resources, Vol. 1 (1979) 163-212.

(6) "Overseas Research and Development by U.S.-Based Firms" (with E. Mansfield and A. Romeo), Economica, 46 (May 1979), 187-196. Reprinted in Wortzel and Wortzel (eds.), Strategic Management of Multinational Corporations (New York: John Wiley, 1985). Reprinted in Economic Performance and the Theory of the Firm: The Selected Papers of David J. Teece, Volume One (Cheltenham, UK and Northampton, MA: Edward Elgar, 1998).

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(9) "Economies of Scope and the Scope of the Enterprise," Journal of Economic Behavior and Organization, 1:3 (1980), 223-247. Republished as "La Diversificazione Strategica: Condizioni di Efficienza," a cura de Raoul C. D. Nacamulli e Andrea Rugiadini, Organizzazione e Mercato (Bologna, Italy: Mulino, 1985), 447-476. Excerpted in Nicolai Foss (ed.), Resources, Firms and Strategies (Oxford University Press, 1997). Reprinted in Economic Performance and the Theory of the Firm: The Selected Papers of David J. Teece, Volume One (Cheltenham, UK and Northampton, MA: Edward Elgar, 1998). Reprinted in Richard N. Langlois, Tony Fu-Lai Yu and Paul L. Robertson (eds.), Alternative Theories of the Firm (Cheltenham, UK: Edward Elgar, 2001).

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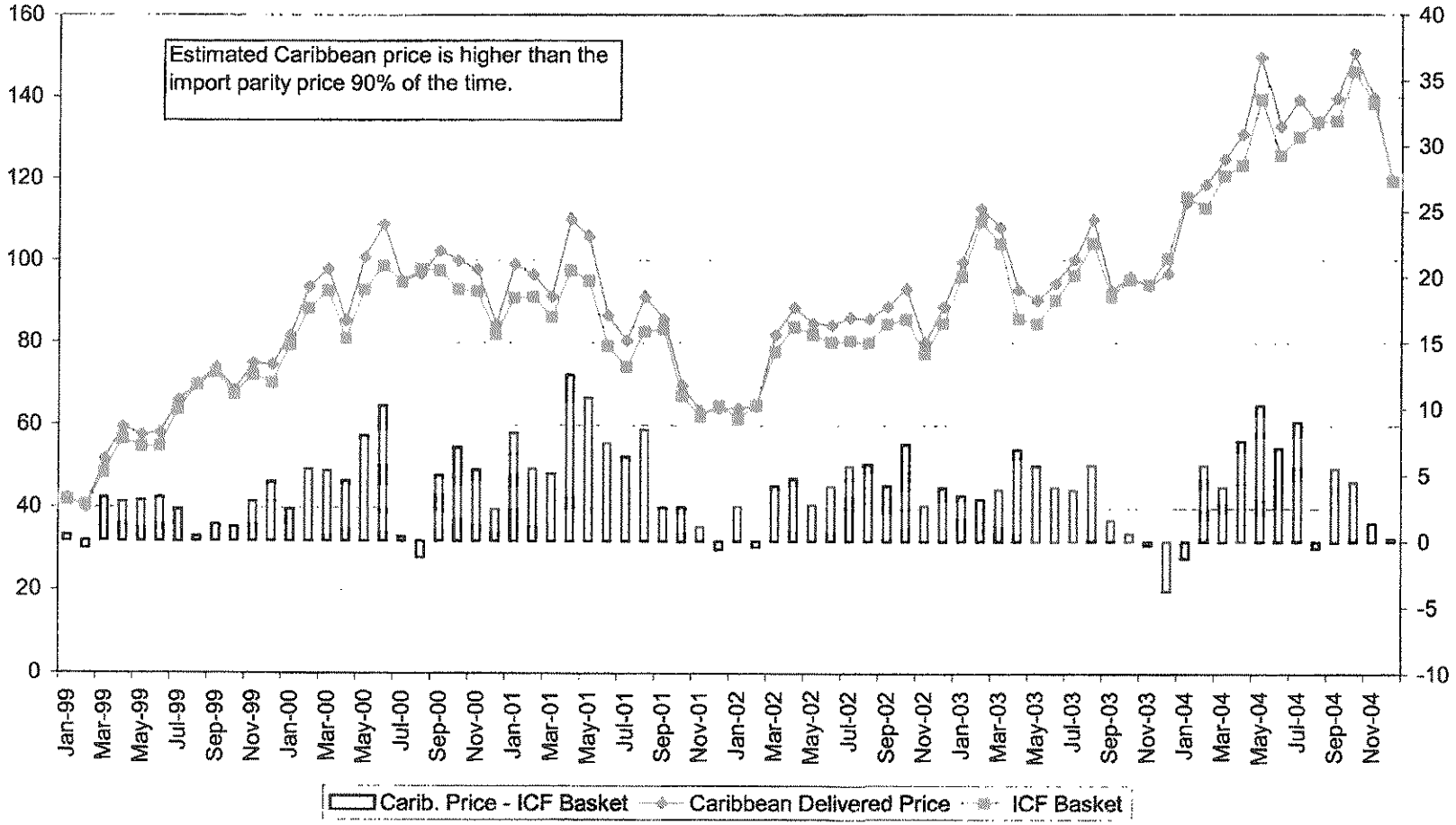
Exhibit 2

ICF Estimated Caribbean Import Price vs. ICF Import Parity Price and Difference Between the Two Prices January 1999 - December 2005 (cents per gallon)



Source: ICF Report

Exhibit 3

Differences Between Spot Prices of Conventional Gasoline and Spot Prices of Gasoline Produced to Higher Specifications 1999 - 2004*

Location	Comparison	Average CPG Difference
Los Angeles		
	Conventional v. Reformulated	7.10
	Conventional v. CARB	7.65
	Conventional v. CARB Ethanol	6.06
US Gulf Coast		
	Conventional v. Low Sulfur	3.71
	Conventional v. Reformulated	3.69
New York		
	Conventional v. Reformulated	3.36

* Calculated based on available data.

Source: OPIS Spot Prices

Exhibit 4

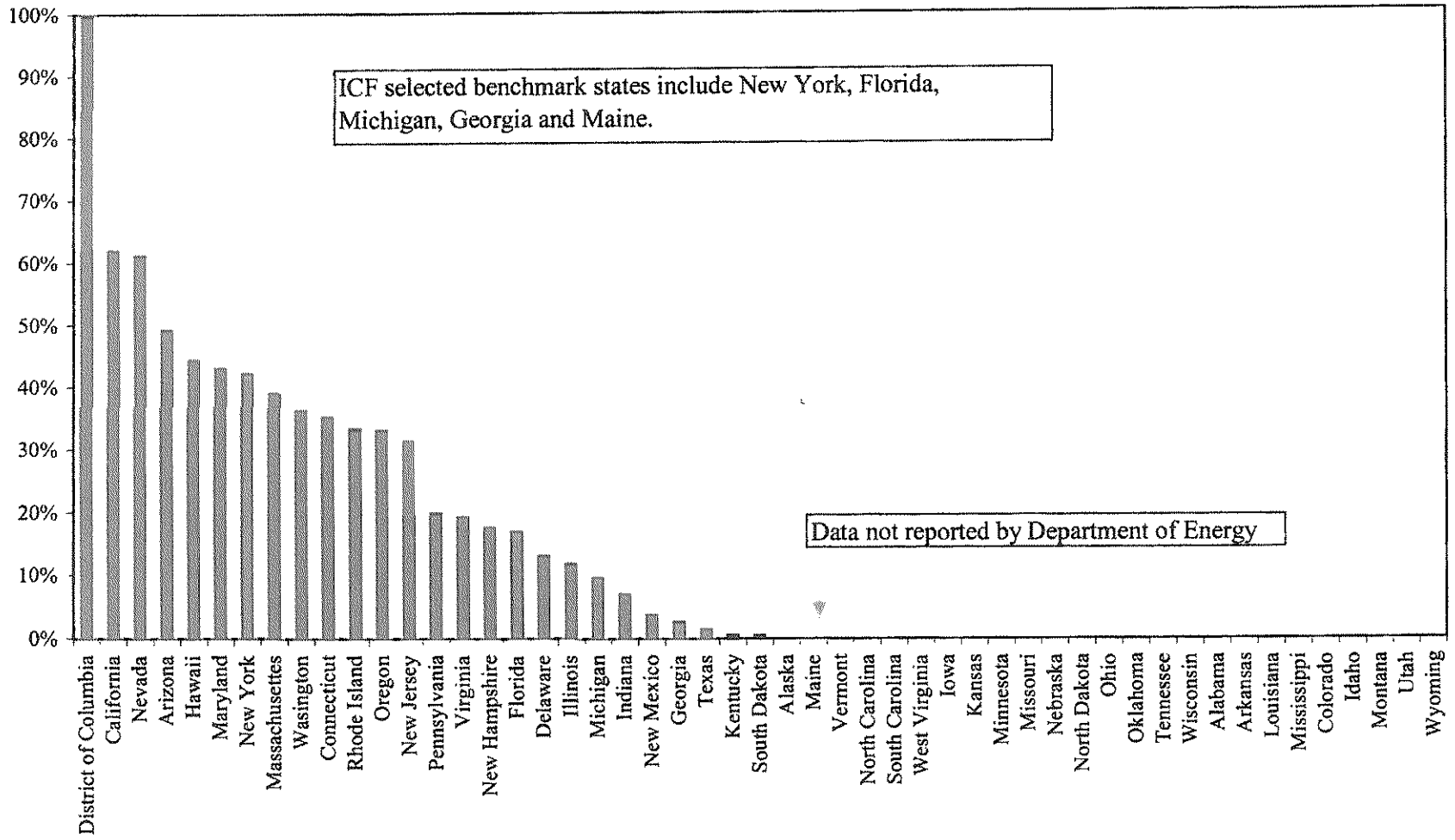
Geographic Areas Used as Benchmarks for Hawaii by ICF

	New York (Albany)	Georgia (Atlanta)	Texas (Dallas)	Michigan (Detroit)	Maine (Portland)	Florida (Tampa)	Washington (Seattle)	Arizona (Phoenix)
Branded Rack	X	X	X	X	X	X	X	X
Unbranded Rack	X		X	X		X	X	
DTW	X	X		X	X	X		
Rack Grade Ratios	X	X	X	X	X	X		
DTW Grade Ratios	X	X		X	X	X		

Source: ICF Report at 35, 40, 53, 55.

Exhibit 5

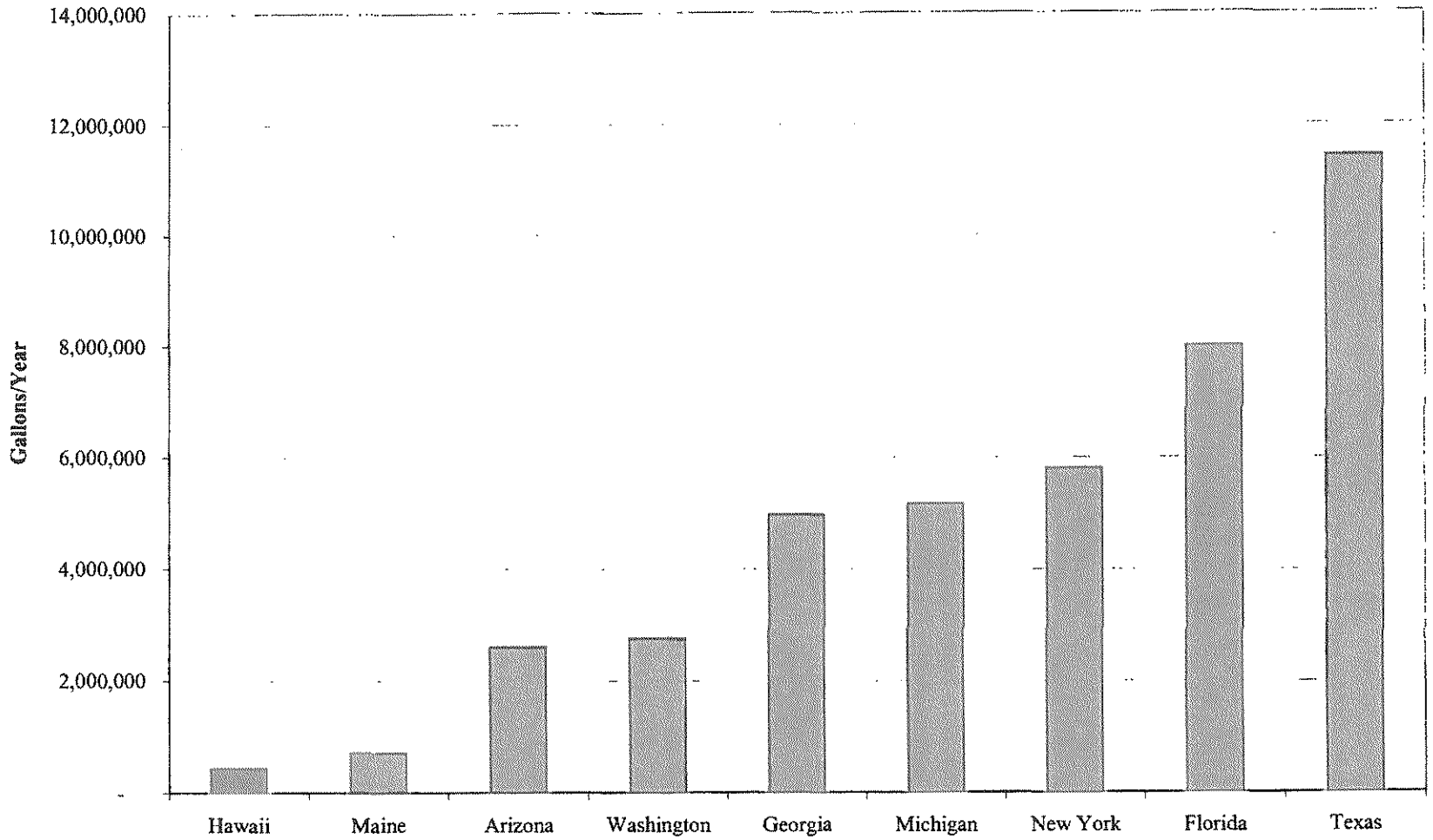
Gasoline Sold to Direct Served Dealers at DTW Price As a Percent of Wholesale Gasoline Sales
Based on Department of Energy Data
2004



Source:Petroleum Marketing Annual, 2004.

Exhibit 6a

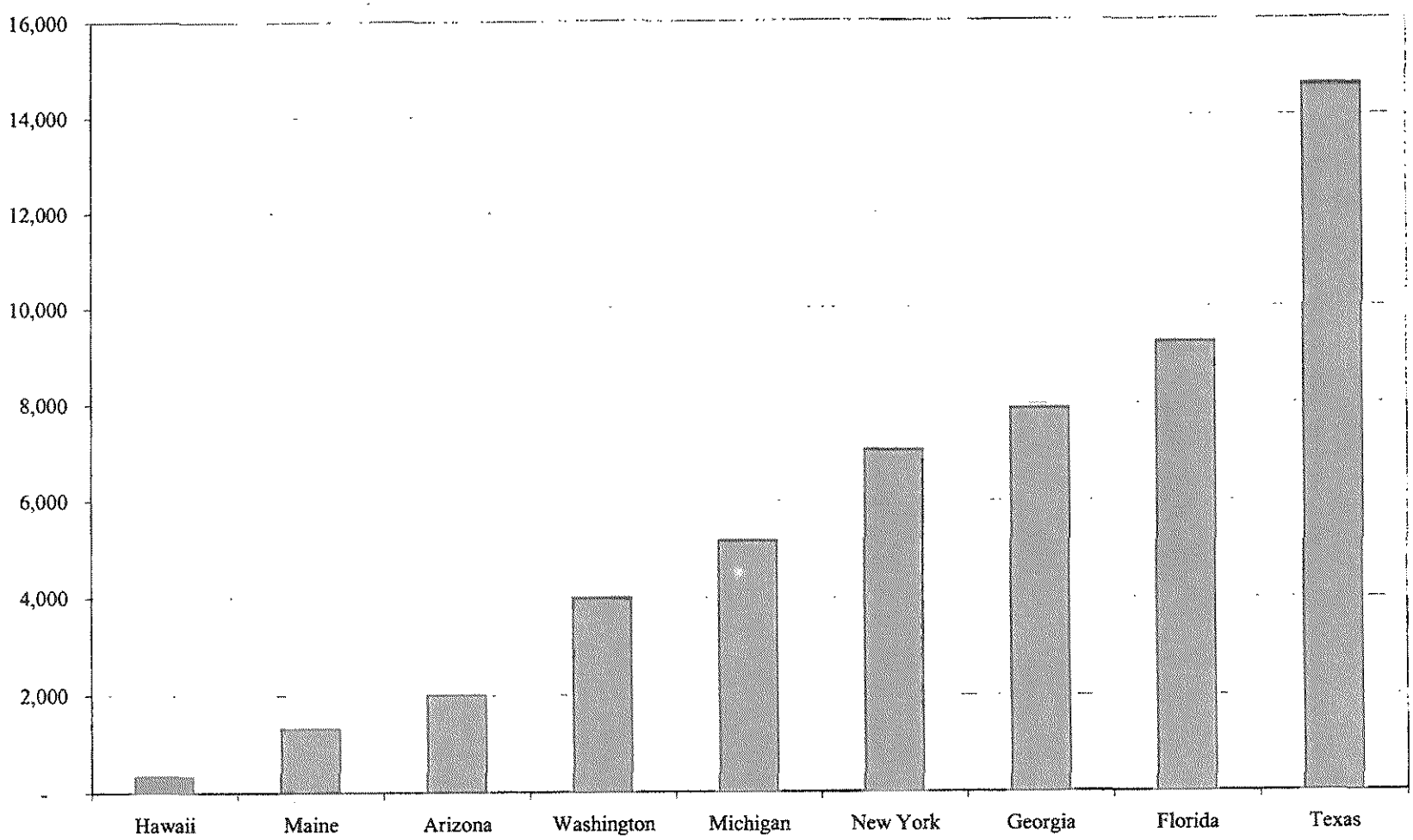
Comparison of Gasoline Volume Sold in Hawaii and ICF Benchmark States
2004



Source: NPN, Market Facts - Mid-July 2004; U.S. Census Bereau - State County QuickFacts. http://quickfacts.census.gov/qfd/

Exhibit 6b

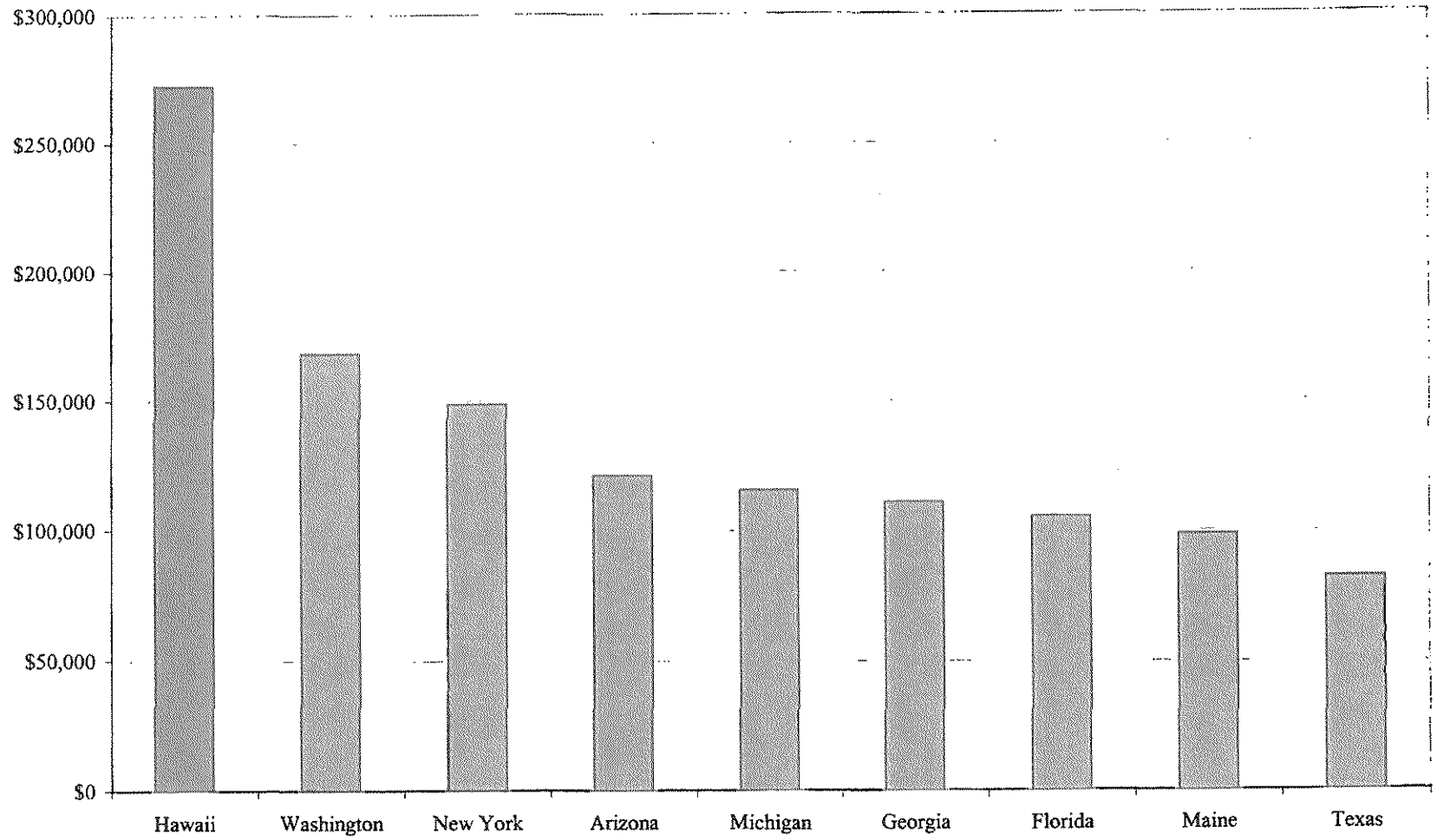
Comparison of Number of Retail Stations in Hawaii and ICF Benchmark States
2004



Source: NPN, Market Facts - Mid-July 2004; U.S. Census Bereau - State County QuickFacts. http://quickfacts.census.gov/qfd/

Exhibit 6c

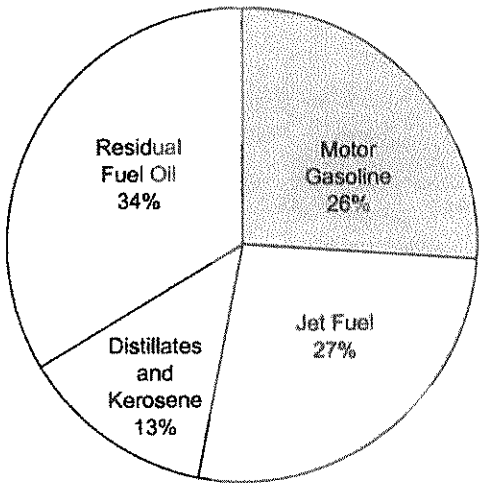
Comparison of Median Housing Price in Hawaii and ICF Benchmark States
2004



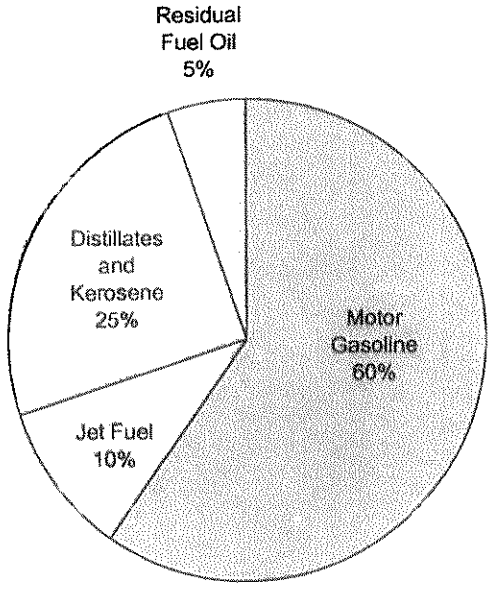
Source: NPN, Market Facts - Mid-July 2004; U.S. Census Bereau - State County QuickFacts. http://quickfacts.census.gov/qfd/

Exhibit 7

Comparison of Petroleum Product Sales Volume in Hawaii, California and the United States 1998*



Hawaii

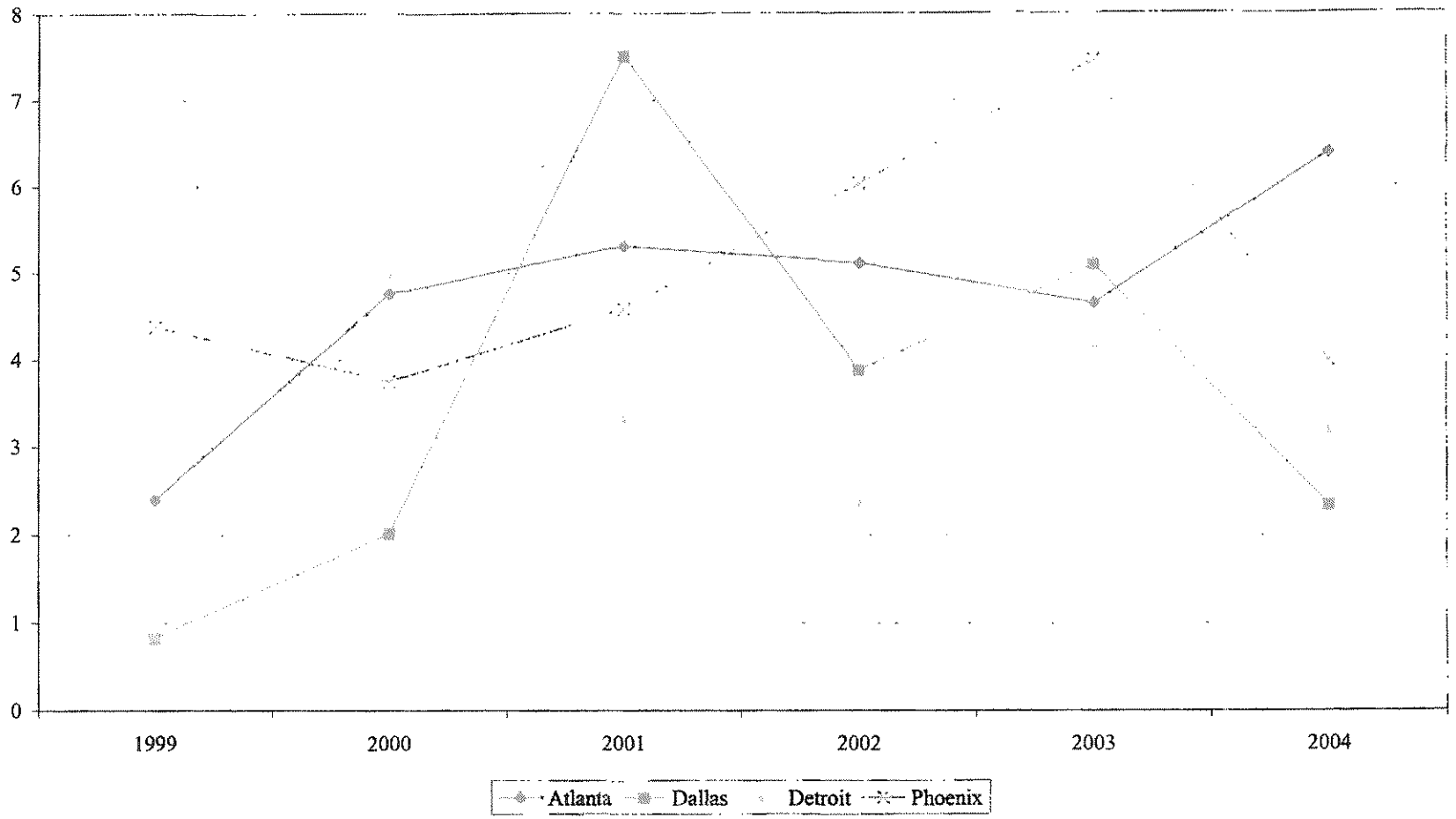


United States

* The most recent year for which volume of these petroleum products sold in Hawaii are available is 1998.
Source: Energy Information Administration, Petroleum Marketing Annual 1998, Tables 48-50, pp. 314-373.

Exhibit 8

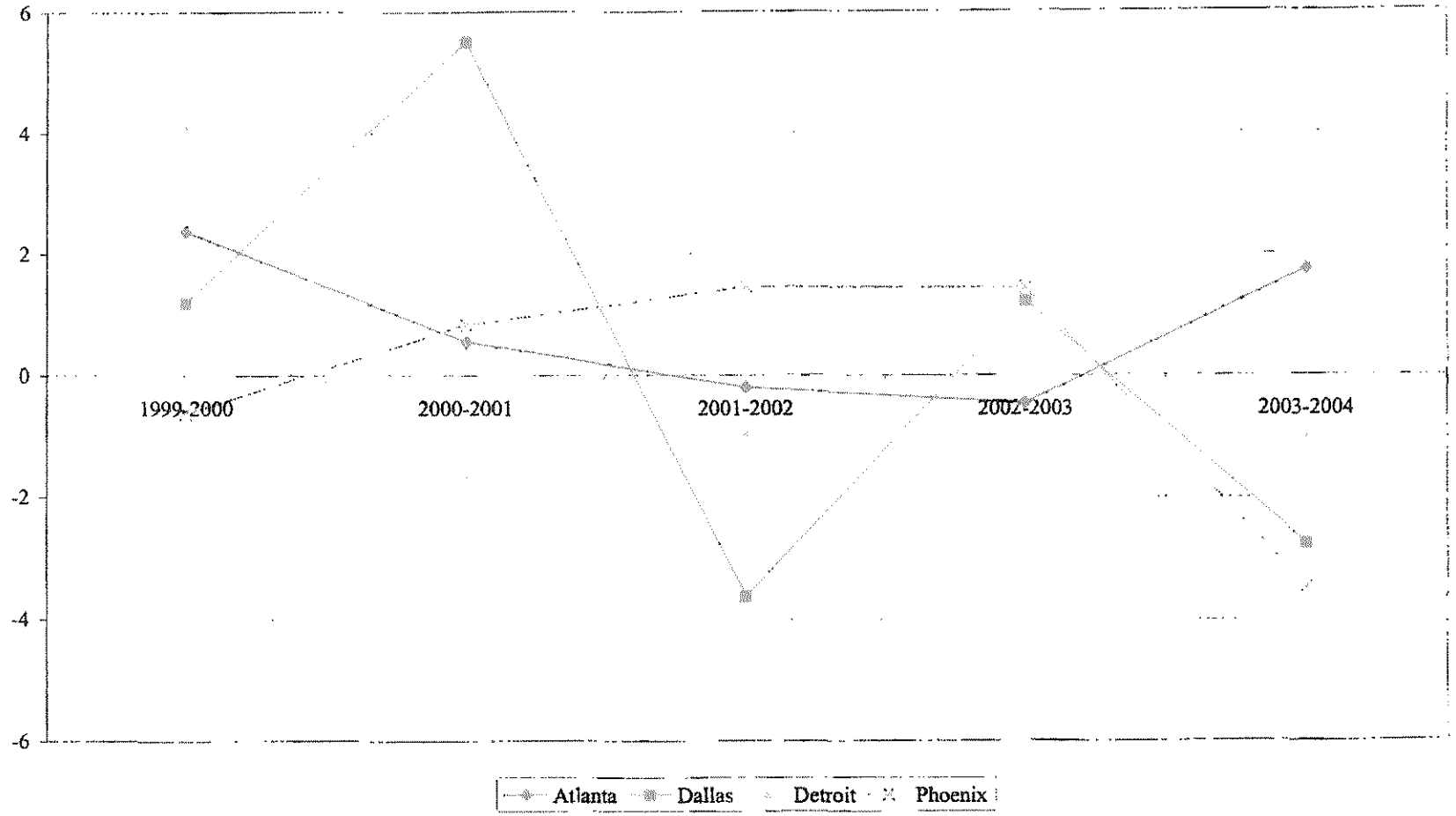
Rack "Margins" Used by ICF As Benchmarks for Hawaii
1999-2004
(cents per gallon)



Source: ICF Report at 36.

Exhibit 9

Change in Rack "Margins" Used by ICF As Benchmarks for Hawaii
1999-2004
(cents per gallon)



Source: ICF Report at 36.

Exhibit 10a

Data Sources and ICF Assumptions Used to Calculate DTW Price Caps for Alternative Areas

State	Spot Price	Transportation Cost	Terminaling Fee
District of Columbia	Platts Unleaded US Gulf Pipe	Colonial - to Fairfax, VA	ICF Estimate
Maryland	Platts Unleaded US Gulf Pipe	Colonial - to Baltimore, MD	ICF Estimate
New York	OPIS NY Harbor Unleaded	ICF Estimate	ICF Estimate
New Jersey	OPIS NY Harbor Unleaded	ICF Estimate for New York	ICF Estimate
California	Platts Unleaded Los Angeles Pipe	Estimate of 2 cents	ICF Estimate

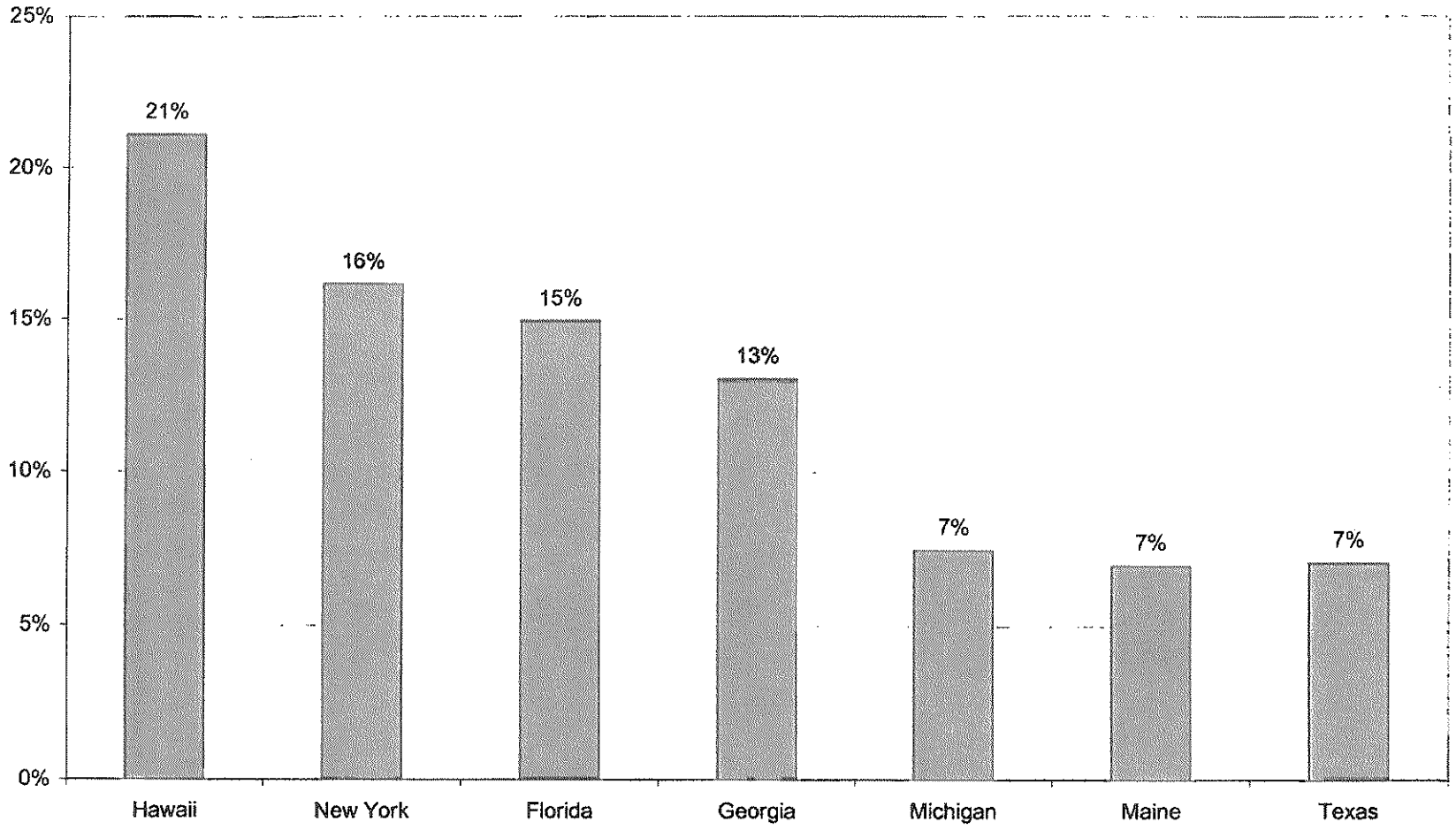
Exhibit 10b

Average DTW Margins Based on Alternative Benchmark Areas
2004

State	Reformulated Gasoline	Conventional Gasoline	Weighted Average
DC	16.6		16.6
MD	11.4	7.8	10.9
NY	19.6	8.9	16.8
NJ	11.5		11.5
CA	7.7		7.7
Average			12.7

Exhibit 11

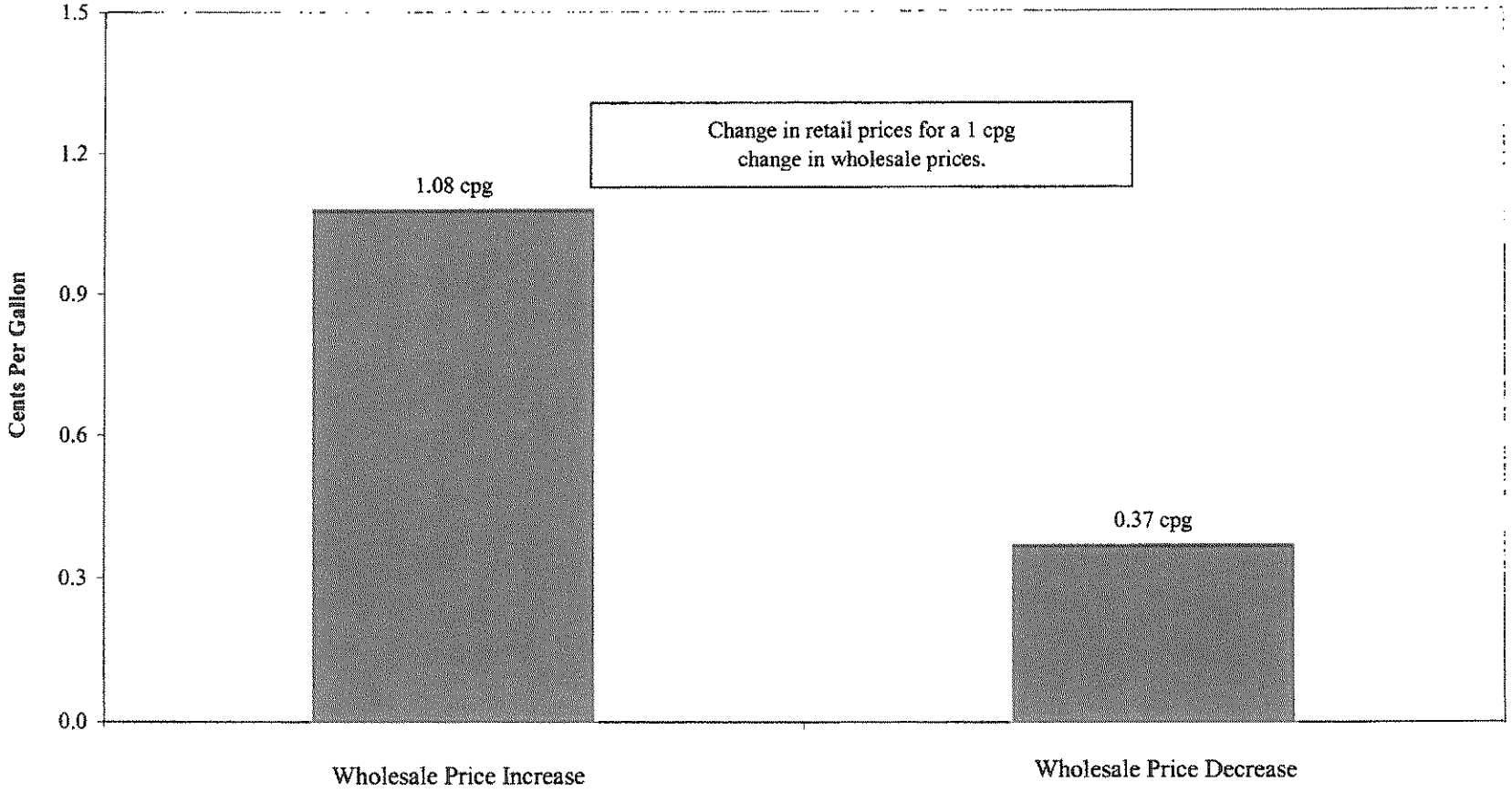
Premium Gasoline As a Percent of Total Gasoline Sold in Hawaii and States Used As Benchmarks for Hawaii by ICF for Grade Differentials
2004



Source: Petroleum Marketing Annual, DOE.

Exhibit 12

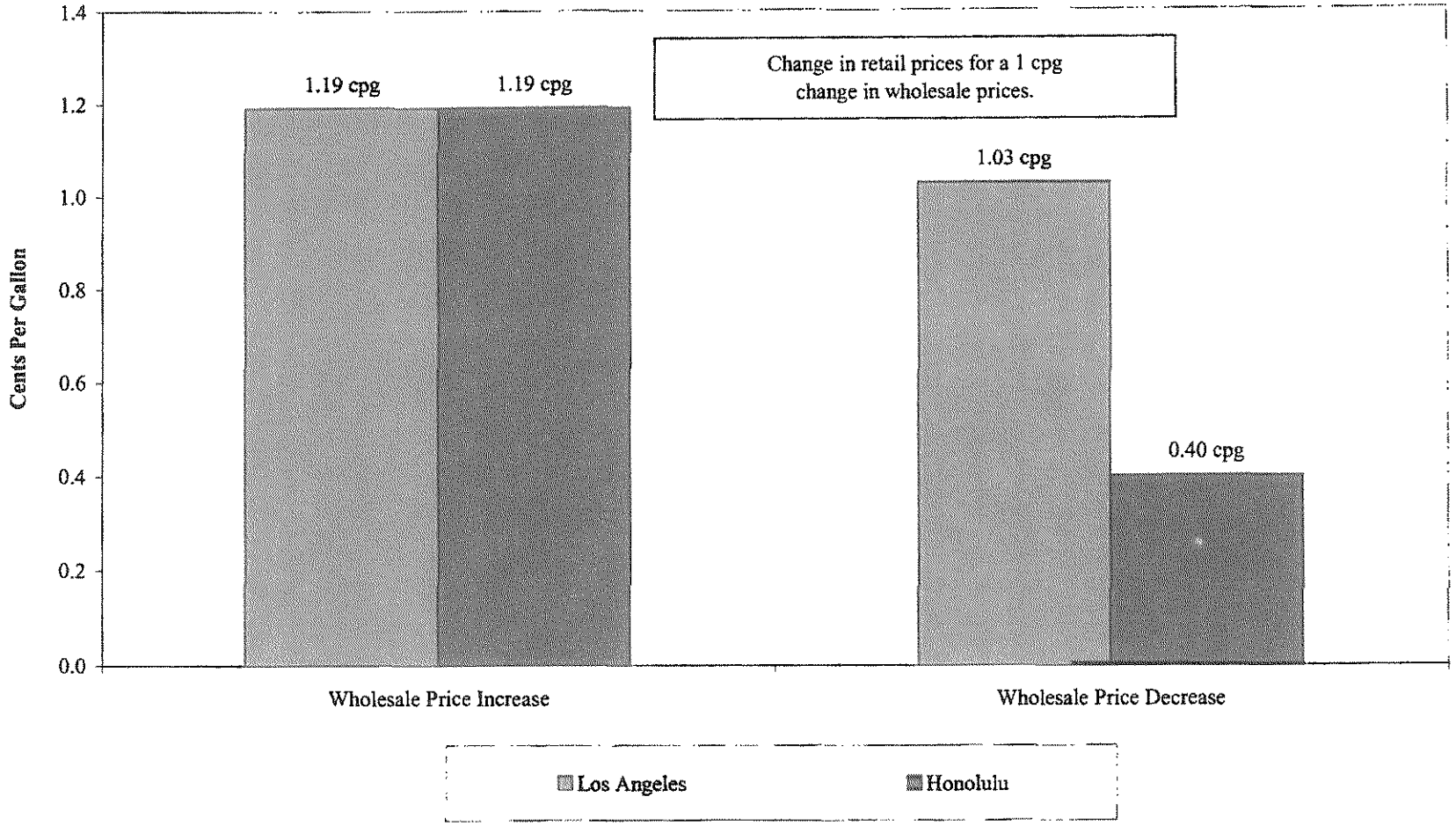
Comparison of Chevron Brand Retail Price Changes in Honolulu
Four Weeks After Wholesale Price Changes
Regular Unleaded Gasoline



* Based on wholesale price and retail price data from Lundberg for the period 7/10/92 - 2/6/98.

Exhibit 13

Comparison of Chevron Brand Retail Price Changes*
Within Six Weeks of Wholesale Price Changes
Los Angeles Versus Honolulu
Regular Unleaded Gasoline



* Based on wholesale price and retail price data from Lundberg for the period 7/10/92 - 2/6/98.

CERTIFICATE OF SERVICE

I hereby certify that on this date I served copies of the foregoing document upon the following parties, by causing hereof to be mailed, postage prepaid, properly addressed, or hand delivered, to the following:

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